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ABSTRACT

This document contains nine papers: four briefs that provide ideas, examples, and resources for practitioners, administrators, and policymakers interested in promoting teacher learning in the workplace and the community and five case studies that illustrate best practices and models for conducting professional development programs for teachers in school-to-work programs. The following papers are included: "Changing Work, Changing Learning: The Imperative for Teacher Learning in Workplaces and Communities" (L. Allen Phelps); "Innovative Professional Development Opportunities: Key Elements for Successful Development" (Victor Hernandez-Gantes); "Educator Internship Programs: Providing a Quality Learning Experience" (Thomas Sargent, Judy Ettinger); "The Use of Professional Development Schools to Inform Educators about the School-to-Work Initiative" (Christine Maidl Pribbenow); "Professional Development in Support of School-to-Work (Jackson-Hillsdale Counties, Michigan)" (Christine Maidl Pribbenow, Thomas Sargent); "Montpelier High School: Restructuring the Educational Experience (Montpelier, Vermont)" (Christine Maidl Pribbenow, Thomas Sargent); "Bringing the World into the Classroom: Business-Education Compact (Portland, Oregon)" (Christine Maidl Pribbenow, Thomas Sargent); "The Advanced Technology Environmental Education Center: A Global Effort" (Bettendorf, Iowa)" (Thomas Sargent, Christine Maidl Pribbenow, Francisco Castelan); and "Building and Sustaining a Commitment to Improving Learning through Staff Development: The Miami-Dade Community College Journey (Miami, Florida)" (George H. Copa). Most papers include substantial bibliographies. (MN)

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National Center for Research in Vocational Education

Center on Education and Work
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National Center for Research in Vocational Education

Center on Education and Work

L. Allen Phelps
CEW Director & Principal Investigator

Victor Hernandez-Gantes
Project Director

Christine Maidl Pribbenow
Research Assistant

Thomas Sargent
Research Assistant

Staff providing technical and advisory assistance with the research:
Francisco Castelan, Judy Ettinger, John Gugerty, Phoebe Rock, Carrie Tobin, and Marica Willson

Project Steering Team

Thomas Blanford
Teacher Consultant
National Board for Professional Teaching Standards
Raleigh, NC

Pamela Block
Director
Illinois Restaurant Association Educational Foundation
Chicago, IL

George H. Copa
Professor
Department of Work, Community and Family Education
University of Minnesota
St. Paul, MN

Curtis R. Finch
Professor
Division of Vocational and Technical Education
Virginia Polytechnic Institute & State University
Blacksburg, VA

Linda Helton
Director
Lake County High Schools—Technology Campus
Grayslake, IL

Birdie Holder
Professor
Vocational and Adult Education
University of Nebraska
Lincoln, NE

Randy L. Joyner
Associate Professor
Business, Vocational and Technical Education
East Carolina University
Greenville, NC

Judith Warren Little
Professor
University of California at Berkeley
Berkeley, CA

Ferman B. Moody
State Director of Vocational-Technical Education
Pennsylvania Department of Education
Harrisburg, PA

Peggi Zelinko
Senior Education Specialist
Office of Vocational and Adult Education
U.S. Department of Education
Washington, DC

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FOREWORD

PROMISING STRATEGIES AND INNOVATIVE PROGRAMS FOR WORKPLACE TEACHER LEARNING

The briefs which follow in this booklet provide ideas, examples, and resources that practitioners, administrators, and policy-makers will find useful. Brief two profiles five unique and innovative locally-developed teacher learning programs, each of which has been in existence for several years. Additional briefs examine best practices and models for conducting internship programs for educators, and for establishing professional development schools that emphasize school-to-work reforms. Other briefs will be released in 1998.

ABOUT THE PROJECT

The NCRVE-led Initiative on Teacher Learning in the Workplace and Community serves leaders and implementers of School-to-Work initiatives from local partnerships, state agencies, and universities or colleges as they seek to enhance teacher learning and development. To advance school-to-work educational reforms, educators at all levels of their preparation and practice must broaden their understanding of and collaboration with businesses, community-based organizations, and other non-school settings. Professional development designs and practices that connect educators and these out-of-school communities will enrich the curriculum with real-world examples, create teaching strategies focused on authentic achievement, create new pathways for students' career development, and ultimately will contribute to both increased academic attainment and a successful transition from school to work.

To date, the project has conducted a national search for promising and innovative teacher learning programs, conducted case studies of five local programs, summarized research and prepared a series of briefs on critical issues in educators' workplace learning, and conducted a three-day national seminar on Teacher Learning in the Workplace and Community (October 1997). Additional information about the project, as well as the briefs and case studies, can be acquired by contacting the Center on Education and Work at 800-446-0399 or visiting the Center's website—http://www.cew.wisc.edu/

DISCLAIMER

This publication was prepared pursuant to a grant with the Office of Vocational and Adult Education, U.S. Department of Education. Grantees undertaking such projects under government sponsorship are encouraged to express freely their judgement in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official U.S. Department of Education position or policy.

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CHANGING WORK, CHANGING LEARNING
THE IMPERATIVE FOR TEACHER LEARNING IN WORKPLACES AND COMMUNITIES

J. Allen Phelps

INTRODUCTION

As the U.S. educational reform movement expands, students at all levels have greater access to work-based and service learning opportunities, enabling them to experience first-hand the new economy and the world beyond school. These experiences help students to understand the relevance and use of mathematics, writing, and other academic subjects, to explore career options, to develop work habits and attitudes, and to prepare for continuous, lifelong learning. Whether bound for the workplace or further postsecondary education, students in secondary schools need these skills to be successful in both careers and college. Yet most teachers have had little or no recent exposure to the workplace's changing practices, including important new skills such as self-directed work teams and computer-aided design systems which are commonplace in the new economy. As they currently implemented in most schools, staff development programs provide teachers with only five or six days each year of professional growth opportunities, with much of that time spent in "hit and run" workshops.[1]

This brief makes the case that all teachers, counselors, and administrators in America's schools and colleges need experientially based, continuous learning opportunities if they are to optimize learning, career development, and school-to-work transition outcomes for their students. As students prepare to enter the workplace of the 21st century, it is imperative that their teachers' level of expertise surpasses the knowledge base they acquired during teacher preparation programs, which likely did not reflect the new models and modes of learning. Over the next decade, local schools, state education boards and agencies, and universities will be deeply involved in improving teacher learning. The National Commission on Teaching and America's Future argues that, by 2006, the nation should ensure that "all teachers have access to high-quality professional development and regular time for collegial work and planning." Similar goals and standards have been posited recently by the President, the Congress, and numerous blue-ribbon commissions and national organizations. The message from recent research, national commissions, and educational reform collaboratives is this: *Teacher learning in workplace and community settings is essential in professional development systems and programs that aim to provide authentic learning experiences for students beyond the school setting.*

In this brief, we will:

- summarize evidence of work-based learning's value for all students
- describe national initiatives supporting experiential or work-based teacher learning
- outline some practical reasons for teachers and administrators to invest in teacher internships, shadowing experiences, business-led institutes for educators, and similar professional development activities.

LEARNING AT WORK: MAKING THE CASE

Most critics of school-to-work reforms argue that workplaces offer little or no opportunity to learn

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valuable skills, and that they in fact track students into low-level technical jobs with little room for advancement. However, recent studies of work-based learning programs point to several valuable academic and postsecondary education outcomes. Schools in which internships, youth apprenticeships, and cooperative education form a core element of the curriculum report increasingly high rates of enrollment in both two-year and four-year postsecondary education institutions. For example:

- The 1995 and 1996 graduates from Wisconsin's youth apprenticeship programs[2] report that this two-year program with 900 hours of worksite learning provides valuable insights for their career and postsecondary education plans. Within one year of high school graduation, seventy-three to seventy-five percent indicate enrollment in either a two-year college or a four-year college or university after completing intensive high school programs such as finance, graphic communications/ printing, biotechnology, or health services. In comparison, data from the U.S. Bureau of the Census[3] reveal that in 1991 twenty-three percent of high school graduates attended two-year institutions, while thirty-nine percent are enrolled in baccalaureate programs. These data suggest clearly that youth apprentices are just as likely as other students to attend college.
- Several of the New American High Schools (1996)[4] cited by the U.S. Department of Education for innovative designs for connecting school, workplace, and community learning experiences have their students heavily recruited by colleges and universities. In 1996, for example, seventy-two percent of the graduates of the Chicago High School for Agricultural Sciences enrolled four-year institutions. At Fenway Middle College High School in Boston, where all seniors complete a six-week full-time internship with one of the school's business partners, eighty percent of the graduates attend college, compared to sixty percent of the graduates city-wide.

School-to-Work for the College Bound, a recent NCRVE publication by Tom Bailey and Donna Merritt (1997), provides an excellent synthesis of several relevant studies. Recent studies of significantly reformed schools indicate that high-quality learning experiences frequently take students into the workplace or community. Newmann and Wehlage (1995) examined twenty-four reformed schools over two years and found that several teaching and learning situations in these schools were designed to help students:

- construct knowledge (i.e., they acquire, organize, evaluate or interpret information),
- conduct disciplined inquiry (i.e., they gather in-depth information to solve complicated problems), and
- "see the value beyond school" of their learning (i.e., their learning experiences provide utilitarian, aesthetic, or personal value to others in the community).

To demonstrate the value of learning beyond high school, it is imperative that teachers be familiar with the various workplace and community settings in which students will function as citizens, family members, and workers. When they examined the "authentic" learning experiences and student achievement in these selected schools, researchers found that authentic teaching had two important benefits: it increases student achievement, and it contributes to a more equitable distribution of achievement among diverse groups of students within schools. This study suggests that schools are able to increase and equalize student achievement for ***all***

students when the community and its workplaces help enrich and deepen students' learning experience.

Findings from studies and evaluations of work-based learning programs reveal some striking parallels. In Flint Michigan, where 11th and 12th grade students have integrated school and work-based learning experiences at General Motors, graduates of the Manufacturing Technology Partnership had higher grades and class rank and dramatically reduced absences, compared with a group of similar non-participating students.[5] Graduates of California's Career Academies were just as likely to attend college as students in a control group, even though they worked more hours during high school than students in the control group. Other studies examining the effects of working in high school indicate that students who work a moderate number of hours per week perform better academically than those who do not work at all. However, students who work a higher number of hours per week do less well academically and obtain less postsecondary education.[6] Finally, the effects of work-based learning are also quite powerful for students with disabilities, and perhaps for other at-risk students. In a recent national longitudinal study,[7] students with learning and other disabilities who were enrolled in regular classes, who concentrated in vocational education with related work experience, and who graduated from high school had significantly better earnings and a greater likelihood of pursuing postsecondary education than did students with disabilities who received an "academic only" high school experience.

Since eighty percent of high school seniors work for pay during their last year in high school (and seventy-seven percent of postsecondary students work while pursuing their college studies), working and schooling are increasingly commonplace for most young adults in our society. Policy-makers, employers, and educators must realize that the opportunities to maximize learning through work are significant, yet vastly underdeveloped.

The new content and performance standards being developed by states and national associations, such as the National Council of Teachers of Mathematics,[8] frequently reflect workplace applications and the use of knowledge in the world beyond school. Using mathematics to "solve real-world problems" is a primary goal of the new mathematics standards. Some of the specific standards from the Mathematics Education Standards which lend themselves to workplace learning are presented in Figure A.

As high schools develop and implement more work-based learning programs which involve the community, considerable evidence supporting these developments is emerging. The early evidence from

FIGURE A. SELECTED MATHEMATICS STANDARDS WITH WORKPLACE APPLICATIONS

Mathematics (9–12)

- Apply the process of mathematical modeling to a real-world problem—*(use of mathematics-based computer-aided design systems to design streets and utilities installations for a new subdivision.)*
- Mathematics as communication—*(nine robots are to perform various tasks at fixed positions on an assembly line. Each must obtain parts from a single supply bin located along the assembly line. Students are asked to investigate where the bin should be located so that the total distance traveled by all of the robots is minimal (p. 141).*

several studies of high schools using work-based learning suggests that students are doing well academically, are enrolling in postsecondary education at rates comparable to other students, and that students from diverse economic and learning backgrounds all benefit from work-based learning.

EXPERIENTAL TEACHER LEARNING: AN EMERGING NATIONAL AGENDA

Expanded experiential learning for educators is a key component of several educational reform efforts. The new standards for certifying beginning and advanced teachers clearly suggest that teachers' knowledge about and experience in settings beyond the classroom is critical to successful teaching. Also, it is important to note that the leading school-to-work programs have included extensive staff development programs which place teachers in workplaces and postsecondary institutions to examine new learning demands.

New Teaching Standards Encourage Connections to Work

The standards movement is also influencing teacher preparation and licensing. Since 1992, the Council of Chief State School Officers has worked extensively with nearly thirty states in developing model standards for states to adopt or adapt as they move toward performance-based credentialing of teachers. Three of the ten principles (see Figure B) express the essence of what beginning teachers should know and be able to do relative to the interaction between community, school, and workplaces. These standards confirm the importance of teachers' knowledge of community resources, and their use of these resources in planning and constructing curriculum and delivering instruction. Principle 9 also refers to the critical role that workplace and community experiences can play in developing reflective practice. A "reflective educator" continuously uses the community, business leaders, parents, students and former students to assess the net effects of school-to-work initiatives, as well as other educational efforts and programs. With this information in hand, educators can systematically develop new curriculums, provide better career counseling, design appropriate teacher internship programs, or launch any of several necessary school-community partnership improvements.

The National Board for Professional Teaching Standards (NBPTS) is establishing standards for what accomplished teachers should know and be able to do. The Board has developed a system of advanced, voluntary certification for experienced teachers interested in assuming leadership roles within their fields of instruction. Over the next few years, the Board will offer certificates in eleven areas of instruction for adolescents and young adults (including one in Vocational Education by 1999). Currently, five certificates are available. One of the five core standards

FIGURE B. STANDARDS/PRINCIPLES FOR BEGINNING TEACHERS, COUNCIL OF CHIEF STATE SCHOOL OFFICERS

- Principle #7: The teacher plans instruction based upon knowledge of subject matter, students, the community, and curriculum goals.
- Principle #9: The teacher is a reflective practitioner who continually evaluates the effects of his/her choices and actions on others (students, parents, and other professionals in the learning community) and who actively seeks out opportunities to grow professionally.
- Principle #10: The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.

for *all certificates* of accomplished teaching notes that teachers are members of learning communities, and thus must be engaged in:

> *. . . contributing to the effectiveness of the school by collaborating with other professionals on instructional policy, curriculum development and staff development. . . . They are knowledgeable about specialized school and community resources available for their students' benefit, and are skilled at employing such resources as needed.*

Professional Development: A Critical Element in Implementing School-to-Work

The central importance of professional development opportunities has been confirmed by recent studies of school-to-work programs selected because of their success in improving students' academic achievement and their transition to work and college. Two of the New American High Schools listed earlier (Chicago High School for Agricultural Sciences and the Fenway Middle College High School in Boston) regularly provide their faculty with opportunities for summer internships in local businesses and in research laboratories at nearby universities. At Fenway, faculty and staff annualy identify and address a set of school-wide professional development goals, that are integral to improving student learning. The current goals focus on developing processes for documentating graduation standards via portfolios and providing diversity training. Substantial blocks of time are allocated for staff development, including a midyear, two-day retreat (held Friday–Saturday), extended contracts for teachers (the equivalent of 10 early-release days spread throughout the year), and a weekly, ninety-minute faculty meeting. The early-release days are used to address the curriculum and instructional needs of content teams (math, science, humanities) and the School-to-Work houses.

High schools belonging to the High Schools that Work consortium, led by the Southern Regional Education Board, regularly compile achievement data on sophomores and seniors in English, science, and mathematics. These schools' goals clearly focus on raising the achievement levels of career-bound students by integrating vocational-technical subjects with related science, mathematics, communication, and problem-solving skills. A recent study of high schools registering the largest gains in student achievement from 1993 to 1996 (when controlling for other key factors, such as changes in the student population) noted that a "focused professional development program" formed a core component of the school improvement plan at most of the seven high schools. In these schools, staff development programs for teachers featured opportunities to observe and interview staff in local businesses, to develop industry-led academy programs (such as the Ford Academy for Manufacturing Sciences) which included staff development, and to participate in workshops focused on linking academic and vocational-technical courses.[9]

Professional development has been a key component in developing, expanding, and sustaining several of the leading School-to-Work model programs. Since 1994, the Manpower Development Research Corporation (MDRC) has been following the progress of 16 local "pioneering" case study sites in 12 states. While examining career academies, youth apprenticeship programs, occupational-academic cluster programs, and tech prep programs, the corporation concluded that extensive use of innovative forms of professional development was central to launching these efforts.[10] As these leading sites have continued to expand by adding new relationships with employers and secondary schools, staff members report that ongoing professional development is vital. Seminars, common planning times, and other opportunities for educators to learn about school-to-work reforms help to reduce isolation between

teachers and introduce new educators to the program. Additionally, professional development is an essential vehicle for assessing the strengths and weaknesses of the program, as well as continuously improving the program and propelling it forward.[11]

Several studies have argued that schools should adopt a substantially different approach to professional development and teacher learning. A business-sector orientation is helpful in reconsidering professional development. Economists Murnane and Levy[12] argue that teachers and their colleagues must receive a level of training and support to pursue solutions to educational and learning challenges effectively—in the same way that frontline workers in high-performance work settings are presented with incentives, opportunities, and training enabling them to solve production problems in manufacturing. The report of the National Academy of Education on Standards-Based Education Reform[13] notes "that moving forward with standards-based education reform requires both more and different opportunities for educators' professional development" (p. 66). To overcome the traditional view of teaching as delivering discrete content and information, educators need continuous professional learning, enabling them to experience how information is used to solve complex problems in the real world by integrating knowledge, concepts, strategies, and skills from a variety of disciplines. To enable their students to engage in learning that integrates technical and academic content, educators must have access to workplace and community settings where these learning experiences and opportunities can be grounded, observed, and fully engaged by both learners and teachers.

INVESTING IN EXPERIENTIAL TEACHER LEARNING

The experiences of several schools and communities that have used professional development to strengthen educational reform efforts, including school-to-work/career reforms, suggest that educators' workplace learning has multiple benefits for schools, students, and businesses.[14] As noted in Figure C, teacher summer internship programs and similar activities promote improved school and community relations. Teacher externships also help teachers collect examples of realistic or real-world problems that provide students with the opportunity to acquire a deep understanding of where and how key concepts are used in various situations beyond school. For

FIGURE C. KEY TEACHER REPORTED BENEFITS FROM WORKPLACE PROFESSIONAL LEARNING

- Enhancing school-community relations.
- Locating real-world problems and illustrations of academics in the workplace.
- Developing insights on performance assessment strategies
- Responding to community economic development needs
- Affirming and expanding teacher's views of the value of their knowledge and contributions
- Developing a clear understanding of the culture of work and community setting and their differences with educational cultures
- Updating technical knowledge and expertise
- Identifying career pathways or clusters that align with student interests and economic needs
- Identifying ne approaches and strategies supporting continuous improvement in schools.
- Identifying mentoring resources for students
- Identifying workplace accommodations for individuals with disabilities

example, illustrations of how statistics and probability theory are used to address problems in manufacturing quality control processes can be illustrated in mathematics, industrial technology, and other courses. By observing self-directed work teams in a hospital setting and developing case studies, educators can identify new teaming arrangements that might be used in their classes. Case studies of teams in their business contexts can be used to illustrate the psychological and sociological dynamics of teams, as well as the importance of understanding cultural and individual differences. By spending mini-sabbaticals in local community and business settings, counselors and teachers can identify the emerging economic opportunities and provide students with more informed career planning. Working with local business-education partnerships, special educators can identify mentors and special work-based or community service experiences for at-risk students. Businesses that employ individuals with disabilities can provide excellent examples of accommodations being made for individuals with physical or learning disabilities in computerized workstations. The list of learning experiences available beyone school and their value to educators is extensive, but two major observations are crucial. First, educators who look beyond the school setting in their professional development gather a renewed sense of the importance of their role as educators. They understand how employers can benefit or be placed "at risk" based on what students learn in their classrooms. Educators find it reassuring to discover that knowledge and learning capacities are indeed a vital concern in today's workplace. Second, as noted above, educators from the elementary to the college classroom can benefit from these experiences. However, each educator will gain different insights from the experience, and each will use it in different ways in curriculum frameworks, instruction, assessment, and career guidance activities with students. Educators' workplace learning is a powerful tool and an important resource for supporting continuous educational improvement at all levels.

RETHINKING PROFESSIONAL DEVELOPMENT FOR ALL EDUCATORS

The central premises of educators' workplace learning and school-to-work reforms also converge to suggest ways to make general improvements in professional development in education. Expanding experiential learning for educators is, in many ways, analogous to business' rising investment in learning for all the organization's employees, rather than focusing primarily on managerial education and training. Recently, the U.S. Department of Education (ED) and the National Staff Development Council (NSDC) have each issued standards and guiding principles for high quality professional development programs. The ED principles envision high quality professional development as:

> *. . . requiring partnerships among schools, higher education institution and other appropriate entities to promote inclusive learning communities of everyone who impacts students and their learning. Those within and outside schools need to work together to bring to bear the ideas, commitment and other resources that will be necessary to address important and complex educational issues in a variety of settings and for a diverse student body.*

The NSDC has specified standards for staff development programs in high schools that emphasize the following:

- Effective high school staff development requires knowledge and use of the stages of group development to build effective, productive, collegial teams.

- Effective high school staff development prepares educators to combine academic student learning goals with service to the community.

- Effective high school staff development increases administrators' and teachers' ability to provide guidance and advisement to adolescents.

These standards for professional development programs emphasize experiential learning for educators. Beyond ensuring that appropriate content and knowledge is integrated into the curriculum, these standards articulate how schools can be restructured so that they become high-performance learning environments for teachers as well as students. One way to ensure that schools are engaged in continuous improvement is to provide opportunities for educators to view other organizations, such as high-performance workplaces in their communities, to review and consider their approach to assessments of employee performance or teaching new technologies to front-line workers. When it is undertaken in high-performance businesses, teachers' experiential learning can reveal a wide variety of insights about restructuring and reforming schools as learning organizations, as well as directly improving curriculum and learning experiences for students.

CONCLUSIONS

The case for expanding the scope and extent of teachers' workplace learning is driven by new evidence that students' academic achievement is advanced by work-based learning experiences. Since many of today's teachers have lacked opportunities to understand the qualities and richness of learning outside of school, a substantial national effort is emerging to support educators' workplace learning. The emerging national agenda is characterized by new professional preparation standards and insights about educators' workplace learning, and its central importance to launching new school-to-work designs within schools and community colleges. New standards for certifying both beginning and accomplished teachers emphasize the critical connections that educators must have with employers, community leaders, and local government agencies if students are to leave high school with the ability and capacity to apply their learning to real-world situations. Evidence from the nation's leading examples of high-quality school-to-work programs places professional development and teachers' connections to workplaces and employers as a key foundation for program development and implementation. In one study, seven high schools with significant gains in student academic achievement have used "focused professional development programs" extensively in the past three years.

Finally, investments in educators' workplace learning affords teachers from various settings a wide range of learning opportunities. These investments yield new insights for teachers about the value of their teaching, both to students as well as the larger community. The work- and community-based learning experiences provide educators with fresh perspectives on the role of academics in the real world, as well as teamwork, problem solving, cultural and individual diversity, and other important phenomena related to school-based learning. Additionally, examining the means by which business and community-based organizations rely on continuous learning provides administrators, teacher organizations, and policy-makers with useful models for transforming professional development. As is the case in many business and governmental organizations, employee education practices that are aligned with mission and productivity goals are imperative in efforts to develop a capacity for continuous improvement within the organization.

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INNOVATIVE PROFESSIONAL DEVELOPMENT OPPORTUNITIES: KEY ELEMENTS FOR SUCCESSFUL DEVELOPMENT

Victor Hernandez Gantes

Reform and innovation in complex systems such as schools requires a substantial investment in professional development. Ensuring that school-to-work systems are accessible to all students in the nation's schools is, first and foremost, a problem of curriculum development and instructional improvement. We need highly skilled and caring educators to expand and enhance curricula, teaching, counseling, and assessment programs based on rigorous standards and developments in America's workplaces. But how can we connect workplace learning and professional development opportunities? What kind of opportunities can provide enriching experiences for teachers? What are the benefits of those opportunities? Are there any promising professional development practices addressing these questions? What can we learn from them?

In January 1997, the National Center's Teacher Education Initiative launched a national search for innovative professional development programs and practices. The Initiative sought to identify programs that were striving to address one or more of the key purposes of the school-to-work educational reforms: enriching the academic curriculum with real-world examples of technologies, creating new career pathways for students' career development and transition, developing active and team-oriented teaching strategies focused on authentic adult achievement, and contributing to improved student learning and successful transition from school to work and/or postsecondary education.

In collaboration with the Steering Team for the Teacher Learning in the Community and Workplace project, staff reviewed seventy-five nominations, searching for those that were most promising. Primarily we were seeking programs that focus on experiential learning for preservice and/or inservice educators. For example:

- Professional development schools/centers that build on collaborative efforts between schools, districts, universities, and local business organizations.
- School-to-work leadership academies or programs sponsored by local businesses to assist educational leaders in improving organizational development and management skills.
- Instructor-led action research networks though which teachers collaborate to examine teaching, curriculum, and assessment strategies in local school-to-work systems.
- State agency or university-sponsored internship programs in which teachers and counselors acquire hands-on experiences in modern workplaces, enabling them to revise curriculum materials, develop new approaches to teamwork and problem-solving, and make other informed changes in teaching, counseling practices, and learning experiences.

After reviewing evidence describing implementation and/or outcomes, we made follow-up phone calls to 15 programs soliciting more information about key features of their program and its evaluation. The follow-up review helped identify five programs where the workplace learning focus was most evident: The

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Jackson-Hillsdale School-to-Work Initiative, in Jackson and Hillsdale Counties, Michigan; The Business Education Compact, in Portland, Oregon; Montpelier High School and the University of Vermont, in Montpelier, Vermont; The Advanced Technology Environmental Education Center, in Bettendorf, Iowa; and the Miami-Dade Community College, Miami, Florida.[1] These programs were studied in-depth to address the questions posed at the beginning of this brief. Several program commonalties which emerged in the analysis of promising case study sites are presented below.

Two distinct phases emerged from the study of promising programs. First, the programs' origination signaled the importance of local leadership. Second, the different approaches taken to connect professional development opportunities and workplace learning showed key elements of successful program implementation.

PROGRAM DEVELOPMENT: LEADERSHIP AND VISION

Innovative practices are most likely to be the product of strong leadership in response to community needs. Across sites, quality professional development programs resulted from local leadership addressing pressing educational needs. For example, the unifying trait the majority of sites share is the vast amount of support and leadership required to initiate the program. The Business-Education Compact, Jackson-Hillsdale Partnership, and Miami-Dade Community College each had an individual leader or group of leaders who initiated the program's development and fostered its growth. These institutional leaders had the vision to build professional development opportunities in response to local community needs connected closely to the world of work.

One program—conceived as a partnership including public schools, local businesses, and a cooperative community college (see case study on Jackson-Hillsdale STW Initiative) necessitated a great deal of leadership to develop a common vision, establish the partnership, motivate prospective partners, seek internal and external supports, and work out the details for collaboration. In this case the leadership was provided by the intermediate school district who teamed up with business leaders in the area. Their vision promoted the notion that "professional growth is the responsibility of the entire community, one in which teachers would be connected to the real world of work," as summarized by an administrator.

> *He is just outstanding. He says that community colleges are going to be dead if they don't do something real fast about getting their faculty up to speed in this fast and changing place. His goal was to really get them out into the world.*
>
> *BEC Executive Director, on the value of visionary leadership*

But how do we translate leadership into focused program development? The Miami-Dade Community College Teacher and Learning Project' quest provided some clues. First, someone must champion a vision for change. In 1986, the Miami-Dade Community College president outlined a multi-year college-wide project to improve teaching and learning and "encourage faculty to take a leadership role in the process." In 1994 the Teaching and Learning Project was approaching full institutionalization. Second, change must be realistic and tangible. The key to successfully promoting the MDCC project required a clear vision involving declaring institutional values and focusing on faculty excellence (see box). Third, leadership behind the project must provide opportunities to enhance teaching/learning and nurture new faculty. To this end, faculty was heavily involved in several of the Project's subcommittees and played an important role in designing, troubleshooting, assessing, and reviewing progress of major activities, policies, and procedures.

Following a similar process and objectives, the Business-Education Compact realized that faculty had to update their knowledge of technical applications beyond the classroom and made workplace learning even more visible in its core objectives. Similarly, Montpelier High School wanted to develop a community of learners in which both teachers and students will be exposed to workplace learning. In all instances, strong leaders were able to champion initiatives and rally key participants by building a common purpose.

Making further changes in curriculum and instruction to addressing current education reform required an understanding of curriculum integration and a willingness to implement high academic standards. Learning about curriculum design, understanding principles of current school reform and related academic standards, and infusing applied learning in existing curricula served as a motivational point for program development. At Jackson-Hillsdale, for example, the curricular component had an impact on the entire staff. Infusing applied academics into existing math, language arts, and economics curricula provided professional development opportunities in curriculum and instruction. In addition to learning about integration practices, the entire 7–12th grade staff received training in the use of applied curriculum materials.

However, each institution's needs are diverse and therefore each program is unique. Some programs were new undertakings, begun from scratch while in other cases programs could benefit from the institution's prior experience. For example, two of the sites developed new programs building upon a preexisting one. By extending programs already in place, Jackson-Hillsdale STW partnership and Montpelier High School worked within an existing framework to enhance their professional development opportunities with a workplace focus. All in all, strong leadership armed with a clear vision for program development responding to specific needs was the common ground among the institutions.

MIAMI-DADE COMMUNITY COLLEGE TEACHER AND LEARNING PROJECT

The objectives of the faculty, staff, and program development initiative were made very clear from the beginning and included:

1. To improve teaching and learning with focus on the increasing numbers and needs of nontraditional students to provide them with high quality education.
2. To make teaching at the college a professionally rewarding career by establishing high performance standards to challenge faculty and enable them to take pride in their accomplishments.
3. To make teaching and learning the focal poind of MDCC's activities and decision making process.

PROGRAM IMPLEMENTATION: PARTNERSHIPS FOR CHANGE

Once the institution had established a common purpose and the need to redesign professional development, the implementation approach was tailored to local circumstances. In our analysis, three major components appeared as a common thread across innovative programs. First, each program demonstrated a comprehensive vision integrating teaching, counseling, internal and external supports, and the common purpose of improving student learning. The second commonality involved a willingness to establish partnerships involving academic and technical faculty, administrators, community leaders, businesses, and postsecondary

institutions. Finally, each program focused on work-based learning opportunities aligned directly or indirectly with school-to-work reform premises.

Comprehensive implementation vision

In general, a comprehensive implementation vision was aligned directly or indirectly with the school-to-work reform premise linking teaching with real-world applications, and integrating academic and technical programs to enhance learning and career development for all students. For instance, educators and business leaders at the Business Education Compact, wanted faculty and students to increase their understanding of the real world. The program's approach was to bridge professional development and the workplace and provide exposure to industry and how academic and technical knowledge are applied.

Montpelier High School (MHS) offered perhaps the most compelling example of a comprehensive innovative design. Its approach was based on educational restructuring principles and envisioned professional development efforts, including reforming preservice education for future teachers, implementing a site-based management structure for current teachers, and developing personal growth opportunities for students. The MHS program's design was based on the concept of a professional development school to foster "responsibility in the challenges and possibilities of working in today's educational and community-based organizations."

> *How are we going to get these kids today thinking about tomorrow* [in realistic ways]? *That's why I'm heavily involved in this program* [and] *anything that has to do with education and business that can provide students with practical experiences.*
>
> *A business leader, on the need for instruction connected to the world beyond the classroom*

Concurrently, MHS secured internal and external supports for its initiative by implementing a site-based management process. The Management Team, made up of eleven members of the high school faculty, provides input on four major areas: curriculum and staff development, general administration, operations, and school climate. Division meetings are used to address the operational aspects of the facility, as well as the educational process within the high school. Because of these efforts, professional development opportunities are connected to the whole school enterprise and are emphasized as a continuous development process.

To further support this professional development approach, MHS switched to a modified long block schedule to ensure teachers' collaboration throughout the week. During a faculty meeting every Monday afternoon, for example, the management team tries to facilitate more extensive discussion of curricular or student issues. On Wednesday mornings instructional and pedagogical issues are addressed. These opportunities to meet and discuss curriculum and instruction during the week keep educators up to date on current school issues and allow them to reflect on implementation considerations. As teachers participate in follow-up activities and discussions each week, their learning from each other becomes another source of professional development. This recognition of expertise among peers is further reinforced by the school's approach of using current MHS faculty to provide inservice training. The resulting comprehensive vision fosters the continuous development of a professional learning community.

Community college sites chose to ground professional development in a series of education centers targeting specific areas of interest. The Advanced Technology Environmental Education Center (ATEEC) envisioned creating a "national world-class network" of community colleges that actively maintain the environmental technology workforce. Specifically, ATEEC is dedicated to advancing environmental

technology education through curriculum development, professional development, and program improvement at both the secondary and postsecondary levels. Its objectives are to strengthen math, science, and technical curriculum and instructional materials that support environmental technology education for all students by: (a) offering professional development opportunities for community college and secondary educators; and by (c) providing support services for program improvement.

Similarly, the Miami-Dade Faculty, Staff, and Program Development Initiative (FSPDI), was designed to "raise the status of teaching as a profession" by providing comprehensive support and information to faculty. Teaching excellence is promoted through Teaching and Learning Centers that offer support for instructional design, including classroom research and expanded application of technology. In 1996, two of the campuses—Kendall and Wolfson—had Teaching and Learning Centers featuring participatory management. The pursuit of faculty excellence is expected to enhance the technical knowledge base and instructional skills.

Across innovative sites, the comprehensive implementation vision included providing support services via scheduling changes, managing with a participatory style, providing information concerning curricular and technical issues, and updating staff on activities to support professional development opportunities. Some programs relied on traditional formats (e.g. newsletters), while others have begun to tap into the Internet to serve as a means of networking and a clearinghouse of information. ATEEC's web site (www.ateec.org) has become one of the organization's greatest avenues for disseminating information. Menus on this site include: Curricula/Programs, Environmental Links, Faculty Development, and Publications. As access to the Internet increases—especially at the secondary level—this site will be capable of providing current resources and support to practicing educators in the field of environmental technology education.

> *At MHS [student teacher] interns are seen as co-professionals in the school, able to teach and perform other adult roles in the life of the school, for example, as participants in planning professional development activities and duties. Interns are involved with a variety of people in the school and thus are mentored and supported, as well as evaluated, through team efforts.*
>
> *MHS Administrator, on the benefits of developing a participatory internship*

Working in Partnerships

Another important component of program implementation is building internal and external supports by establishing partnerships with key stakeholders. Partnerships with postsecondary institutions were evident across all sites. For instance, building partnerships with local universities to collaborate in Professional Development Schools (PDS), support program design, or help conduct institutes and other professional development programs was a common theme. By connecting with postsecondary institutions, sites tapped into valuable sources of expertise for program design and implementation. These connections seem to strengthen the opportunities to build communities of learners and to expand the horizons of both students and teachers. As an additional benefit, students and teachers can earn advanced graduate credit when they take advantage of these postecondary connections.

At another site, ATEEC worked with three organizations—the Hazardous Materials Training and Research Institute (HMTRI), the Partnership for Environmental Technology Education (PETE), and the University of Northern Iowa—to design, implement, and achieve its goals. Similarly, for several years now, Montpelier High School and the University of Vermont (UVM) have developed a collaborative partnership to

> *We're valued in the classroom. It is truly a cooperative experience. At MHS it has been a unique experience. It was termed as "co-professional'."*
>
> *A participant intern, on the nature of her experience as a student-teacher intern on the MHS/University of Vermont partnership program.*

establish and maintain a Professional Development School (PDS). The Montpelier Professional Development Site, in conjunction with UVM, provides a unique experience for students in the Secondary Education program who intern at MHS. This program was designed to actively engage preservice teachers in the school as interns. At this site, UVM faculty co-teach courses with MHS faculty at the high school. This collaborative educational team subsequently evaluates each intern. The current structure of this PDS allows both one-semester and full-year internships as student-interns either complete their Bachelor's or Masters of Education degree. Interns are asked to participate in a number of activities, to become "immersed in the total life of the school," and to "use their time in the school to visit teachers and observe in classrooms both in and out of their academic discipline and at varying grade levels."

Of course, partnerships with employers in the community are essential to professional development opportunities linked to workplace learning. Some sites developed partnerships with local chambers of commerce, while others sought individual corporate sponsors who could provide funding. In most instances schools will collaborate with several companies in the form a consortium. The Business-Education Compact, organized as a non-profit organization, represents an innovative approach to connecting employers and educators. Membership dues, contracted services, grants, and contributions fund this organization. The Board of Directors for the BEC is currently made up of 30 business leaders and 30 educators. Since its establishment in 1984, more than 1800 educators have participated in BEC programs. Also, more than 300 businesses of varying sizes and interests have participated in these programs.

Work-based learning

The focus on work-based learning is a key component among innovative sites. Through a variety of work-based learning opportunities, programs allow faculty to get in touch with the "real world," to develop career awareness in various industries, and update skills and knowledge in selected occupational areas. Through partnerships with business and industry, work-based learning serves as a vehicle for linking community groups, government agencies, businesses, and educational institutions, enhancing the preparation of both students and educators. These work-based learning opportunities included:

- Fellowship and internship programs that provide structured work-based learning opportunities.
- Short-term professional development opportunities including job shadowing experiences, visitation programs, and other experiences providing brief exposure to workplace activities.

Fellowships/Internships

The collaborative developed by the Greater Jackson Chamber of Commerce and Spring Arbor College is a good example of a fellowship program. Their Business Fellowship Program was designed to encourage educators and corporate individuals to participate in collaborative workplace experiences. The Business Fellowship Program is based on a six-week summer experience. Each week, educators spend 36 hours in the workplace making observations and working on activities that apply concepts learned through their work-site experience. Four additional hours a week are spent on the Spring Arbor College campus

> *Traditional in-service days—dog & pony shows that are set up weeks in advance—are a thing of the past.*
>
> *Internship participant on the innovative approach to working in today's educational and community-based organizations.*

discussing the implications of their experiences and their application to the classroom. Follow-up sessions scheduled during the fall and spring semesters allow participants to share lesson plans, which have been implemented based on their experience during the Business Fellowship Program. In addition, participants discuss changes that have occurred in their pedagogy and how these changes have affected their classroom. Participants may elect to earn two graduate credits from Spring Arbor College.

At the Business Education Compact (BEC), an internship program was developed to place K-16 educators (i.e., teachers, administrators, career coordinators, School-to-Work coordinators, and counselors) in worksite positions with Oregon employers. The BEC and specific businesses cooperate to make sure that the intern's needs and interests fit with a project. In the last twelve years, more than 200 employers have participated, and over 600 projects have been completed. For example, its Metalswork internship program unites industry, government, education, and community groups to focus on improving the skills of the emerging, transitional, and existing workforces in the metals industry. The Oregon Precision Metal Fabricators Association (OPMFA) and Oregon Metals Industry Council (OMIC), with the facilitation of the BEC, have entered into school-to-work partnerships with ten high schools and six middle schools in the Metro-Portland area to pilot innovative ways to teach students and educators about the metals industry. Teachers and counselors from the schools participate in summer and school-year internships in metals companies to learn about the industry and translate their knowledge into their curriculum. To earn university credit through Portland State University for the internship experience, the intern drafts an Action Plan. The Action Plan documents how educators will translate their summer business experience into something applicable to students in their classroom.

Similarly, at ATEEC, the Faculty Associates in Science and Technology (FAST) internship program was originally designed as a source of professional development opportunities tied to ATEEC's mission. The FAST Internship Program is based on a four to six week summer experience. Educators spend 40 hours a week working on their assigned projects, making observations, and applying concepts learned during their work-site experience to their individual academic setting. Further, ATEEC developed a two-week "Fellows Institute" offered in June on the University of Northern Iowa campus. Supported by a National Science Foundation grant, the institute was designed for secondary and community college educators with the following objectives: (a) Continue development of model articulation programs; (b) recommend exemplary math, science, and environmental technology instructional materials; (c) identify and create instructional activities for teaching real-world applications in the disciplines of math, science, and environmental technology; and (d) evaluate and improve an instrument that educational institutions can use to assess their environmental technology programs.

> *I plan to use some real-life examples* [in the classroom]. *I think giving a situation that the students can relate to and having to use math to solve it will give them insight that math really is used in the real world.*
>
> *A fellowship participant on potential implementation of workplace applications in the classroom.*

The Fellows Institute was designed to meet these objectives by relying on current high school and community college instructors' expertise in curriculum development and implementation. The Fellows' composition is approximately one-third community college environmental technology instructors, one-third community college math or science instructors, and one-third high school math, science, or technology education instructors. During the institute, fellows are asked to critically evaluate curriculum and educational activities. The final composition of the group is ultimately decided by ATEEC to meet the needs and goals of the subsequent Fellows Institutes. Once chosen, a fellow receives a stipend of $1,000 for working on grant objectives. Two graduate or undergraduate credits are awarded to each fellow. In addition, ATEEC pays tuition, fees, housing, and transportation. Each year a dedicated and motivated group of faculty is chosen to work as fellows and to represent ATEEC in conferences and their institutions across the country. The experience appeared to be a rich source of ideas for the improvement of curriculum and instruction in environmental technology.

Short-term exposure

Across innovative programs, various short-term professional development opportunities provided exposure to workplace applications and the workings of certain industries. For example, the Jackson-Hillsdale School-to-Work Partnership, in collaboration with the Western School District, designed a Teacher Externship Program to further promote technology within the district. This program is a voluntary, one-day teacher visitation to technology companies in the area. It is open to 4th–12th grade educators and student teachers. Through these visits, teachers gain exposure to technology applications in the workplace, and may form some ideas about translating these application into classroom activities. In addition, the program helps maintain teachers' knowledge of technology applications and become better informed on career possibilities in the field—knowledge which can be shared with students. Between 1993 and 1997, more than 55 teachers participated in the program. To provide continuous support and information on improving environmental technology education, a series of Regional Instructors Resource Conferences are held annually at each of six administrative regions. They provide instructors with current information related to the effective implementation of environmental technology education. Each regional conference draws approximately 100 participants annually. In addition to the larger regional Instructors Conferences, smaller train-the-trainer workshops are held within each region to help instructors obtain up-to-date training about current topics.

> A big thanks goes to [visitation coordinator]. He really helped me see how much math he and his employees use every day. I am looking forward to an externship....and hope to increase project-based learning—those that involve different areas of math into my lesson plans.
>
> Visitation Program participant on the value of exposure to workplace applications

At BEC two types of short-term visitation programs are available for teachers: career-focused and curriculum-focused. The career-focused opportunity is available for K–16 educators who can only make a one- or two-day commitment. These opportunities are open for classroom teachers, counselors, STW coordinators, and administrators and are similar to the program at Jackson-Hillsdale. The curriculum-focused visitation days usually occur over a four-day period, in which each day is devoted to the application of subjects (e.g., math, science, language arts, social studies) in the workplace. That is, teachers focus their attention on identifying potential applications for academic concepts in the context of the particular industry visited during that period.

CONCLUSIONS AND IMPLICATIONS

It was evident across sites that strong leadership is necessary to set an agenda for educational change informed by the premises of current school reform. Leaders at various levels understood the need to provide teachers with professional development opportunities connected to workplace learning to facilitate change in the long run. Strong leadership was necessary to recruit supporters from key sectors (e.g., faculty, administrators, employers) and to craft a common agenda based on local needs and resources. A shared vision for change emerged from this process and was understood by all parties involved at this initial stage.

At the implementation stage a collaborative approach was important for establishing the working vision for professional development, to meet local needs, and to gain teacher participation. The common theme was the need to link professional development opportunities and workplace learning. The scope and nature of each approach varied from school-wide restructuring ideas to programs focusing specifically on developing new professional development opportunities. Implementing each program required working in partnerships with other schools, academic and technical faculty, employers, and between institutions at different educational levels. Internship and fellowship programs were the primary source of professional development opportunities and appeared to provide a well-focused study of workplace applications. Short-term opportunities (e.g. one- or two-day visitation programs) were also useful in increasing the number of faculty exploring workplace learning.

As indicated by these findings, it is important for educators to understand that the extent of local leadership will dictate the nature of professional development opportunities linked to workplace learning. Gaining support from employers, faculty, and other educational leaders in key positions is a formidable task. Pushing a "good" idea, believing that it will sell itself, may not be sufficient to gain support from key parties. A great understanding of the need for change, alternative strategies for professional development, and the ability to build a cohesive partnership are all necessary elements for successful program development. Bridging the motives and agendas of all people involved is a challenging balancing act requiring patience and the ongoing nurturing of partnerships. Thus, to maintain the focus and quality of each program, it is important to transfer some of the responsibilities in design and development to those who participate in the programs. Participatory management strategies appear to provide the means for continuous improvement of these collaboratives.

Further, it was clear that all sites were successful in providing professional development opportunities connected to workplace learning. In all instances, exposure to workplace applications was a vital part of the professional development experience. For instance, it was evident that internships and fellowships requiring relatively greater involvement provided more rewarding experiences to a small number of teachers. However, the cost associated with these opportunities appears to be a factor limiting the participation across all sites. Thus, visitation programs were designed as an alternative, to increase the number of faculty exposed to workplace learning. To address this issue, the BEC manages a computerized matching system allowing teachers to identify and participate in workplace learning opportunities throughout the region. There are 48 secondary schools and two Community Colleges in the Metro-Portland area currently utilizing this system, reaching more than 30,000 educators and students.

In addition to the cost of participation and opportunities available, it is important to note that the quality of workplace learning experiences may vary depending upon what participants actually do during and after participation. In internships and fellowship programs, it is clear that curriculum activities provide more in-depth study of workplace applications,

opportunities to reflect on connections to the classroom, occasions to develop action plans, and in some cases to gain graduate credit. Although assessing the impact of these experiences on curriculum changes and student learning exceeded the scope of this study, it was apparent that both internship/fellowship and short-term opportunities served the purpose of providing exposure to interested faculty. The extent to which these experiences translate into classroom actions warrants further research to document success in applying workplace learning experiences. Further study is particularly important in the case of short-term professional development opportunities where direct links to classroom applications appear to deserve more attention.

In conclusion, it is evident that exposing teachers to workplace learning has numerous benefits for teachers, schools, employers, and students. However, exposure alone may not be enough. An appropriately crafted curriculum must serve as the vehicle to focus participation and allow teachers to make the connections in the classroom—even in cases where exposure is limited to a few days. Also, it is imperative that we develop a better understanding of how professional development programs impact student learning and career development. If we are to improve teacher preparation through participation in workplace learning, then it is necessary to document and measure the extent of curricular changes, instruction, learning, and student understanding of academic applications beyond the classroom.

ENDNOTES

[1] For a detailed description of each of these promising sites see either the respective case study in this NCRVE BRIEF series or contact program liaisons directly:

Shelley Jusick, STW Coordinator
Jackson County Intermediate School District
6700 Browns Lake Road
Jackson, MI 49201
517-787-2800
517-787-2026 fax

Tamara Busch-Johnsen, Executive Director
Business-Education Compact
3800 SW Cedar Hills Blvd. #200
Beaverton, OR 97005
503-646-0242
503-644-9968 fax

Owen Bradley, Counselor
Montpelier High School
5 High School Drive
Montpelier, VT 05602
802-223-6368
802-223-1923 fax

Diane Gere or Cynthia Lake, Instructional Designers
Advanced Technology Environmental Education Center
500 Belmont Road
Bettendorf, IA 52722
319-359-7531 ext 292
319-344-355 fax

Marie Nock, Director
College of Training and Development
Miami-Dade Community College-Kendall Campus
111011 SW, 104th Street
305-237-2366
305-237-0958 fax

EDUCATOR INTERNSHIP PROGRAMS: PROVIDING A QUALITY LEARNING EXPERIENCE

Thomas Sargent and Judy Ettinger

Since the implementation of the School-to-Work Opportunities Act of 1994, educator internship programs have flourished across the nation. Prior to 1994, these internship programs were primarily established by local employers and nonprofit organizations. Today, the majority of internship programs are operated by school districts, community colleges, educational service regions, and local education-business partnerships. This brief is designed to give educators and administrators practical information about participating in, or establishing, internships in business and industry for educators. An internship is traditionally defined as a work-site experience where participants complete a series of activities, and, after a period of reflection, produce a demonstrable product that can be used to improve their teaching.

The American education system plays an important role in transitioning youth from school to the world of work. Recent studies suggest that work-based learning, in addition to learning in the classroom, is vital to students' success in both career pursuits and post-secondary education (Bailey and Merritt , 1997, Stern, et. al, 1995). Yet many educators do not know what educating youth for the emerging global workplace entails. This puts them at a disadvantage when they try to integrate subject matter into a context that has meaning beyond school. Work-based professional development experiences give educators relevant and current information, as well as real-world examples that can enrich curricular content in a wide variety of courses—including those in academic areas such as history, English, and mathematics.

Proponents of adult learning theory and cognitive psychology (e.g., Knowles, 1987; Kolb, 1984; Lave and Wenger, 1991) stress the importance of internship learning for professionals. They believe that learning is not done in isolation but is grounded in experiences which have meaning beyond the academic setting. Learning in context clarifies educators' understanding of situations within social contexts and decreases the possibility of "misinterpretation or faulty learning" (Lankard, 1997). The internship experience and connecting components provide a crucial link between theory and practice, which enables instructors, administrators, and counselors to reflect critically and philosophically on their educational practice (Inkster, 1992). Internships are vital to creating teams of educators with firsthand, practical experience in problem solving, planning and management, facilitating collegial and experiential learning, and developing authentic forms of assessment.

Various stakeholders have acknowledged and applauded the benefits of participating in educator internship programs. Teachers benefit from the:

- application of real-world experiences to classroom subject matter
- enrichment of their knowledge and skills
- ability to validate and align curricular content
- recognition that their expertise has value beyond the classroom

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- ability to link their experience to future student success
- academic credit and monetary compensation typically associated with these experiences.

Student learning is enhanced by the educator's ability to:

- connect school-based learning with real-world problems and examples
- provide the current information, skills, and knowledge necessary to function in the workplace
- integrate up-to-date information on trends in business organizations that utilize the academic knowledge and skills taught in the classroom
- provide accurate and timely information on careers
- create appropriate work-based learning experiences for students

Schools and colleges benefit from the:

- improved links to the community through its educators
- curricular improvements
- professional development experiences that improve educational reform efforts and enhance strategic plans
- increased access to technical workplace teaching technologies (e.g. donation or use of cutting-edge equipment, software, case studies).

Businesses and nonprofit organizations that support educator internship programs benefit by having:

- local schools and colleges focus directly on the skills and knowledge required by new employees
- a community profile that demonstrates their commitment to strengthening education
- insights about improving the lifelong learning capacity and educational programs of their businesses
- educator interns engaged in projects that contribute to the organization's success

A review of national educator internship programs shows wide variation in purpose and design. The unique design of educator internship programs, which align with local educational improvement plans, is vital to their success. Although the programs may have some structural components in common (as noted in the latter part of this brief), most need to be tailored to the unique characteristics of the surrounding community. The remainder of this brief provides guidelines for designing a high quality learning experience for participants engaged in an educator internship program.

COMPONENTS OF EFFECTIVE PROGRAMS

Partnerships

Given the nature of school-to-work legislation, it is important that participants collaborate on the design and delivery of internship-related activities, regardless of who is responsible for initiating the partnership. Collaborators may include local school-to-work

GEORGETOWN & HORRY STW CONSORTIUM
Georgetown, South Carolina

This bi-county consortium collaborates with 12 businesses to implement an integrated experience for educators. The initial session is facilitated by school staff and focuses on an overview of Tech Prep and school-to-work legislation. During the next 12 sessions, the businesses make three hour presentations during which they describe their business, their workforce needs, and the basic knowledge and skills required of all employees.

partnerships, Tech Prep consortia, school improvement committees, area businesses, chambers of commerce, universities, local school districts, and workforce development groups. The degree of involvement of internship organizers will vary. Some programs will involve business partners as career mentors for the participating educators at the work site. Other programs contribute more significantly to the educational experience. Effective partnerships that have developed and sustained educator internship programs have:

- involved all partners equally in the design of the program
- recognized the bottom-line needs of and for business, educators, and educational institutions
- incorporated appropriate incentives for educator interns
- developed strategies for evaluation, feedback, and continuous improvement.

Conceptual Framework

High quality internships have, as their goal, the development of new knowledge and experiences for educators that ultimately improve student learning. The "framework" refers to the information needed to design and implement effective school-to-work curricula in the classroom. To some program planners that means ensuring participants have an understanding of:

- school-to-work initiatives at the local and state levels
- information about the education, skills, and attitudes that business leaders are seeking in employees
- how to develop curricula and apply the knowledge gained during an internship
- labor market trends and statistics
- the local and regional economy.

The educator internship course offered at the University of Wisconsin–Milwaukee is organized around four conceptual knowledge bases: the national agenda as it relates to school-to-work issues, state school-to-work initiatives, the Milwaukee Public School school-to-work agenda, and career counseling theory. The conceptual framework of the University of Wisconsin–Green Bay's educator internship program is based on the interrelationship of economics and education.

Program Design

Work-based internships have been designed for varying groups of K–16 and pre-service educators. Academic and vocational-technical educators, counselors, administrators, and educators working with special populations are encouraged to participate. Although programs vary considerably, all are designed to increase participation in and awareness of the workplace and provide the knowledge and experience that will help educators prepare students to enter and learn from work related experiences. Our research of effective internship programs suggests that four components need to be included in the design of an educator internship program: an action plan, a pre-internship orientation, an experiential component, and connecting activities.

Action Plan

The goal of this activity is for the intern to develop an Action Plan that presents an informed approach for designing, modifying, and informing educational practice that integrates school-based and work-based learning. The Action Plan documents how the internship experience is to be translated into educational practice. The performance objectives that guide this assignment should state:

> *Given the educator's participation in an educator internship program the communication and documentation presented through the Action Plan will:*

- Demonstrate a connection between work-based (internship experience) and school-based (educational setting) learning.
- Describe strategies for integrating the internship experience into academic and occupational learning opportunities.
- Demonstrate the impact of the internship experience on personal professional growth and development.

Participants typically develop one of three types of action plans. One focuses on an individual's professional development goals and objectives. This form of Action Plan helps educators in identifying what they want to do and how they want to do it within the internship experience. A second type of Action Plan translates the internship experience into classroom applications and curricular improvements. The third combines the first two types in an effort to integrate the intern's experience into the educational setting.

Action Plans may include: lesson plans, journal entries, reflective analyses, videos, databases with resources, strategic plans, computer plans, proposals and budgets, and meeting agendas. An Action Plan is more than a lesson plan or summary report; it must address the following:

- A description of the educational practice(s) to be addressed and the changes to be made as a result of implementation.
- A description of the target audience and an analysis of:
  a. their probable learning styles
  b. the probable forms of learner resistance
  c. potential structural and functional organizational conflicts that could affect the success of the Action Plan.
- A detailed outline and explanation of the exercises, presentations, and activities to be conducted after participating in the Educator Internship Program. This should include samples of any materials, handouts, overheads, or other documentation that can be used to support the activities.
- A list of references that are pertinent to the topic of the Action Plan. This list should be comprised of contacts made during the internship, organizational documents, and literary publications that may be useful to the intern and others.

The Action Plan should address the specific components outlined yet allow flexibility in how they are articulated. There is no set length or specified format since the scope and nature of plans vary among participants. The Action Plan may be completed individually or in collaboration with others participating in the Educator Internship Program. Exemplars of outstanding Action Plans should be made available. Interns should be encouraged to seek feedback from colleagues familiar with the process before submitting an action plan.

Pre-Internship Orientation

A pre-internship orientation is vital for the educator and the work-site mentor. This session is instrumental in setting the stage for both the employer's and intern's experience; it should provide ample opportunities for both to identify goals and expectations. Mentors should prepare for the educator's arrival by setting clear expectations for the experience and providing the educator with an orientation to the company or organization.

STW EMPLOYMENT SERVICE INTERN PROGRAM

New Jersey Department of Labor

This project was designed to train guidance counselors and classroom teachers in the use of labor market information. Prior to their experience, they were trained about the agency to which they were assigned. They learned about the various resources available and how to work with adult clients to meet their career-related needs. During the orientation, interns constructed learning objectives for themselves and began a journal documenting their experiences. The journal was subsequently used to formulate a final written curriculum.

INDUSTRY INITIATIVES FOR SCIENCE AND MATH EDUCATION (IISME)

Palo Alto, California

This program was founded by a consortium of San Francisco Bay Area companies and government laboratories that recognized the need for a skilled workforce. Employers hire science and math teachers for paid eight-week summer fellowships. Teachers who participate are expected to return to their classrooms equipped with new tools and strategies for teaching students. They emphasize teamwork, problem-solving, communication skills, and practical applications of math, science, and technology in their teaching.

Experiential Component

The experiential component can range from an intensive internship during which an educator is expected to work 40 hours per week on the job for a full eight weeks, to a less formal job-shadowing experience that might last a day or two. The less formal experiences are recommended for educators interested in obtaining a general or initial overview of workplace issues and knowledge to use in building their understanding of the "new economy." Details about these less formal types of work-based experiences are documented in Professional Development in Support of School-to-Work: Jackson-Hillsdale Counties and Bringing the World into the Classroom: Business-Education Compact—case studies in this series.

To improve teaching, learning, and curriculum, an intern should participate in a more formal 3–18 week experience. During this time the intern pursues specific learning objectives, completes a planned series of activities, and completes a project. Tasks associated with the completion of a project are designed to provide a deep understanding of a business or organization, a workplace technology application, the use of math and science skills in emerging careers, or other insights important to the intern and the sponsoring employer. The project should culminate in a demonstration (product or presentation) of learning (NWREL, 1997).

During their time in the workplace, educators are expected to focus on:

- identifying technology applications and career opportunities to use in instruction and career guidance activities
- documenting skills that both beginning and advanced workers need to be successful
- compiling career and labor market information that will help students when they are ready to enter the workforce.

The scope of the internship experience varies dramatically based on the organization of the program. Some internship experiences are designed for an individual to obtain a single in-depth workplace experience. This experience may be related to a specific project identified to complement the intern's skills. Other programs expose interns to a wide variety of experiences in an effort to identify the various ways in which their curricular subject matter affects the business or organization. The depth of experience is also dependent on the specific program. During the course of an internship, participation may range from observation and shadowing to having full

responsibility for a project or production activity. Generally, interns have varying levels of involvement during an extended internship. Participation may be related to the amount of knowledge and skill the individual brings to the business and the internship assignment.

SCHOOL-TO-WORK ACADEMY
Shelby, North Carolina

Teachers in this internship program were asked at the beginning of their experience to identify gaps in their lesson plans where they needed more current and relevant examples and activities. Their assignment was to gather activities and/or materials from their worksite to enhance their lesson plans. For example, a pair of technical math teachers included graphs and charts containing information about cars at a Ford service department in a lesson that emphasized interpreting and analyzing information.

Connecting Activities

Seminars and workshops, facilitated by institutions of higher education and intermediary organizations, are the common format used to provide collaborative group activities following—and occasionally during—the experiential component. This structured period of time set aside for debriefing is another component of a successful internship experience. During this time, discussions of learning theories, new methods of instruction, and strategies for curriculum integration may occur. Activities may promote and increase awareness of themes such as alternative assessment, the teaching of SCANS skills, and student career guidance. Seminar participants may spend time reading and discussing professional articles and research that is relevant to educational reform and the role of business-education partnerships. In contrast to the collaborative group activities, individual documentation of the experiential component occurs through journal entries, reflective written narratives, and the development of curricular and instructional materials that integrate knowledge, skills, and insights obtained from the work-based experience.

BUSINESS FELLOWSHIP PROGRAM
Spring Arbor, Michigan

This program is based on a six-week summer experience. Each week educators spend 36 hours on the job making observations and working on activities that apply concepts learned during their work-site experience. Four additional hours each week are spent on the Spring Arbor College campus discussing the implications of their experiences and their application to the classroom. This weekly collaboration is seen as an integral part of the program. Follow-up sessions scheduled during the fall and spring semesters allow participants to share lesson plans which have been implemented based on their experience during the Business Fellowship Program. In addition, the participants discuss changes that have occurred in their pedagogy and how this has affected their classroom.

Journal entries typically describe what was observed in the workplace, as well as the intern's perceptions of the business and workforce activities. Often, entries will describe the strengths of and challenges faced by the organization, questions that arise as the intern comes to terms with new information and strategies, comments on new understandings or connections to specific curricula, enlightening experiences, and comments on the approach used by the organization to conduct business (Keystone, 1996). These daily entries become extremely valuable when reflecting back on the experiential component and in developing applications for the classroom.

BUSINESS-EDUCATION COMPACT
Portland, Oregon

This intensive three-to-eight week internship program emphasizes the curriculum writing component of the internship experience as the critical part of each Action Plan. Quite often these Action Plans focus on translating the internship experience into classroom applications through curriculum development, enrichment, and alignment. One of the staff members working with interns has a strong background in curriculum development and is experienced with the needs of industry. A mentor is assigned to work at the internship site with educators to help them discover ways to work on their Action Plans by translating their work into information and activities that can be used in the classroom.

The reflective narrative is a systematic way for participants to learn more about themselves and how they can better effect change in their educational environments. This written document highlights the workplace experience and allows the intern to reflect on the curricular and instructional implications of their experience. The reflective narrative allows the participant to learn from their internship experience in ways that will assist their teaching performance.

Not all educator internship programs require a product or curriculum at the conclusion of the project, but it becomes a critical component if educators are to integrate their work experiences into the educational setting. Typically, a complete curriculum, or a teaching or counseling unit is required. The development of curricula that integrates insights from the experiential component may be an individual or collaborative venture. Activities associated with this process may include the development of:

- lesson/unit plans that infuse knowledge and skills obtained in the workplace
- curricular pathways for specific occupations
- plans for new or expanded work-based learning programs for students
- action plans that describe how the internship experience will translate into an applicable unit for students in the classroom.

Several programs require interns to complete a formal presentation of their projects, while a number of others require them to write articles for school newsletters and to meet with educational administrators to determine how they can infuse their workplace experiences into the curriculum. The connecting components justifiably become the evidence and tangible products that link work-based internship programs with educational improvement efforts.

SCHOOL IMPROVEMENT PLANS
State of Oregon

Oregon's school improvement plan requires that new curriculum be tied to both the Certificate of Initial Mastery (CIM) and a Certificate of Advanced Mastery (CAM), which are being utilized to assess student achievement. School administrators are relying on educators to contribute new knowledge and information to the curriculum so that it contains the necessary components needed for certification. The internship program designed by the Business-Education Compact in Portland provides educators with workplace experiences, which enables them to develop essential standards-based curricula leading to the CIM and CAM. The products and results of the internship are exactly what the school districts need to meet the goals outlined in their school improvement plans.

INTEGRATING THE EXPERIENCE

For the full benefit of the work-based internship to be realized, educators must bring their experiences into the educational setting. This generally occurs through the connecting activities required by most programs. Once educators bring the knowledge into the classroom, students, and other educators will

benefit. Experiences in the workplace typically provide educators with insights on how to make their curriculum come alive with relevant and practical applications. Once work-based experiences have been converted to curricular content and have been implemented, time should be spent reflecting on the student outcomes associated with these modifications. Several educator internship programs bring together educators in the year following their experience. In these seminars, educators can share with one another the difficulties they face in implementing their specific action plans. Internship experiences contribute to one's individual professional development, as well as providing support for local and state level initiatives for school improvement. For example, interns interested in becoming principals, deans, or curriculum directors might focus their internship on the "management development" or "technical training" programs offered by businesses or organizations.

VERMONT EMPLOYER/TEACHER INTERNSHIP PROGRAM
Burlington, Vermont

Participants are expected to integrate their experiences into Individualized Professional Development Plans, which are required for Vermont licensing. Additionally, they must complete a product that demonstrates curriculum redesign based on their internship experience, such as units of study, a journal, a log, or a portfolio of their work experience.

EVALUATION AND CONTINUOUS IMPROVEMENT

The evaluation process used by most educator internship programs entails a survey of participant experiences and perspectives and the uses of the internship in shaping curricula, teaching, counseling, or learning assessment. In most cases, the effectiveness of a internship is judged by participants' satisfaction with the program or an indication of change in their knowledge and methods of instruction. The value of this experience is ultimately measured by analyzing the ability of interns to expand and adapt their instructional practice to include workplace knowledge and skills in an effective and authentic manner. There is no one "right answer" or one "best way" to implement and evaluate an internship program—there are many ways, all adapted to the environment in which the program is established. Internship program leaders should plan to annually collect experiential and impact information from business and industry sponsors, participants, and former participants. This information should be used to modify and improve the educator internship program as needed.

In conclusion, internship programs serve as an "eye opening" experience for the majority of educators who participate. The success of any internship program rests in finding the optimal mix of design components that can be applied in a particular educational setting and produce the desired outcomes for students.

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CONTACT INFORMATION

Horry-Georgetown STW Consortium
Gail Abernathy
430 North Fraser Street
Georgetown, SC 29440
803-546-2561

Business-Education Compact
Tamara Busch-Johnsen
Suite 200
3800 SW Cedar Hills Boulevard
Beaverton, OR 97005
503-646-0242

STW Employment Service Intern Program
Suzanne Guibert
New Jersey Department of Labor
Division of Workforce Development, CN933
Trenton, NJ 08625-0933
609-633-1360

Industry Initiatives for Science and Math Education
Kaye Storm
1636 Madrono Avenue
Palo Alto, CA 94306-1017
415-326-4800

School-to-Work Academy
Sandra Kistler
130-2 South Post Road
Shelby, NC 28152
704-487-8581

Business Fellowship Program
Ann Riddle
Spring Arbor College
Spring Arbor, MI 49283
800-968-9103

Vermont Employer/Teacher Internship Program
Nancy Cathcart
505 South Willard Street
Burlington, VT 05401
802-863-4113

RESOURCES

Center on Education and Work

Thomas Sargent, Research Assistant
970 Educational Sciences Building
1025 West Johnson Street
Madison, WI 53706-1796

Phone: 608-263-5936
Fax: 608-262-3063
E-mail: tsargent@soemadison.wisc.edu
Web: www.cew.wisc.edu

Judy Ettinger, Senior Outreach Specialist
972 Educational Sciences Building
1025 West Johnson Street
Madison, WI 53706-1796

Phone: 608-263-4367
Fax: 608-262-3063
E-mail: jettinger@soemadison.wisc.edu
Web: www.cew.wisc.edu

National School to Work Office

The School-to-Work Information Center
400 Virginia Avenue , Room 150
Washington, DC 20024

Phone: 800-251-7236
Fax: 202-401-6211
E-mail: stw-lc@ed.gov
Web: www.stw.ed.gov

National Center for Research in Vocational Education (NCRVE)

2030 Addison Street, #1674
Suite 500
Berkeley, CA 94720-1674

Phone: 510-642-4004
Fax: 510-642-2124
E-mail: AskNCRVE@ncrve.berkeley.edu
Web: www.vocserve.berkeley.edu

Northwest Regional Educational Lab (NWREL)

Matt Clifford, Program Specialist
101 SW Main Street
Suite 500
Portland, OR 97204

Phone: 503-275-9568
Fax: 503-275-0443
E-mail: clifform@nwrel.org
Web: www.nwrel.org

Scientific Work Experience Programs for Teachers (SWEPT)

John Ortman, Director Program Planning
Triangle Coalition for Science and Technology Education
5112 Berwyn Road
College Park, MD 20740-4129

Phone: 301-220-0870
Fax: 301-474-4381
E-mail: tricoal@aol.com
Web: www.triangle-coalition.org

THE USE OF PROFESSIONAL DEVELOPMENT SCHOOLS TO INFORM EDUCATORS ABOUT THE SCHOOL-TO-WORK INITIATIVE

Christine Mandl Pribbenow

This brief offers examples of how two current education reform initiatives, one designed to improve teacher education and one designed to improve student learning, can be integrated to achieve better outcomes for both educators and learners. Professional Development Schools (PDS) have been designed to improve preservice teachers' education through a collaborative partnership between a school, school district, and a college or university-based teacher education program. School-to-Work (STW) is a recent initiative developed to improve and connect school-based learning with students' future goals. The following text describes ways in which the elements of the STW initiative align with the goals of a PDS. More specifically, the PDS model can be used as a framework to teach STW concepts to both preservice and inservice educators. By combining the six organizing principles of a PDS as defined by the Holmes Group (1990, p. 7) and the concepts basic to STW, this new model of teaching and learning can provide the basis for systemic education reform which reaches future teachers, current teachers, and students.

Professional Development Schools

In the Holmes Group's seminal book *Tomorrow's Schools: Principles for the Design of Professional Development Schools* (1990), Professional Development Schools (PDS) were identified as a way to address necessary reform in the preparation of teachers. The Holmes Group, originally comprised of representatives from approximately 100 research universities committed to redesigning teacher preparation, described a PDS as a new organization which "develops novice professionals, continues and enhances the development for experienced educators, and researches and develops teaching as a profession" (Holmes Group, 1990). In practice, this development occurs through a collaborative relationship between a public school and an institution of higher education.

Many schools and universities have formed collaboratives similar to a PDS. These collaboratives are called "professional practice schools" (American Federation of Teachers), "clinical schools" (Carnegie Reports), or "partner schools" (National Network for Educational Renewal). In a national survey completed by the Clinical Schools Clearinghouse in 1994, sixty-six school-college partnerships were identified consisting of seventy-eight colleges and universities, along with 301 preK-12 schools. Approximately 75% of these partnerships existed at the elementary school level. In a subsequent survey, between 300 and 400 individual partnerships (i.e., one school in collaboration with one university) were identified (AACTE, 1997).

Two primary reasons for the establishment and proliferation of PDSs have been identified (Shen, 1996). First, a national decade-long trend of teacher education reform continues to gather widespread interest and support (Carnegie Forum, 1986; Goodlad, 1990; Holmes Group, 1990; National Commission on Teaching and America's Future, 1996). Second, the appropriate redesign of teacher education requires the involvement of teachers and schools which can "exhibit the best practices" (Goodlad, 1986, cited in

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Shen, 1996). Universities are actively seeking schools with which to partner—schools which exemplify the optimal theories and best practices emanating from the current research on teaching, learning, and the nation's changing economic and social interest. If colleges and universities are able to work and collaborate with schools, preservice teachers will be exposed to productive and effective learning experiences. For these reasons, schools of education and local districts have joined together for the mutual benefit of both.

The Holmes Group stressed their belief that universities don't "have any business telling the community what kind of schools it should have, but have a right to say how teachers should be prepared" (1990, p. 5). While members of the Holmes Group did not want to suggest that PDSs could solve all of the educational system's ills, this approach is one that could address the goals of improving teaching and elevating its status as a profession.

According to the Holmes Group, the following principles guide the organization of an effective PDS:

- Principle One: Teaching and learning for understanding.
- Principle Two: Create a learning community.
- Principle Three: Teaching and learning for understanding for everybody's children.
- Principle Four: Continuing learning by teachers, teacher educators, and administrators.
- Principle Five: Thoughtful long-term inquiry into teaching and learning.
- Principle Six: Inventing a new institution.

School-to-Work

While universities and schools are defining ways to improve the education of teachers, proponents of School-to-Work reforms (STW) note the beneficial practices this initiative provides for school-age students. The School-to-Work Opportunities Act (STWOA), enacted in 1994, suggests that local education and business community partnerships redesign the school-to-work/career transition for youth to include work-based learning, school-based learning and connecting activities. New designs for school-based learning include the integration of curricular content both across and within academic and occupational courses, and enhanced career planning and exploration experiences. Work-based learning opportunities provide students with real-world applications of knowledge through mentoring programs, cooperative education, or youth apprenticeships. Connecting activities bring the schools, workplaces, and institutions of higher education into closer working relationships by developing articulated secondary-postsecondary education programs in areas such as business or the health professions, and by offering teacher internship programs in businesses or community agencies.

As local schools, colleges, and businesses have developed STW systems, and as schools and colleges have developed PDSs, there are interesting possibilities for integrating these initiatives so that both student and teacher learning is strengthened. This Brief describes how the PDS model can be used as a framework to educate both preservice and inservice educators about the STW initiative.

Using the Six Guiding Principles

Principle One: Teaching and Learning for Understanding

The Holmes Group thought it important that "all the school's students participate seriously in the kind of learning that allows them to go on learning for a lifetime" (1990, p. 7). In other words, a PDS should establish teaching methods that actively engage students in constructing their own knowledge for deeper understanding. Teachers in a PDS school would actively and intentionally engage students in their own learning, as suggested by the Holmes Group:

(Students) need to learn how to interpret what they learn, and to relate it to what else they know, and whenever possible to have some experience of what is being taught. They need to take the new information and fuse it with more conscious and refined meanings (1990, p. 12).

STW practices are similarly focused on providing students with in-depth knowledge. Congruent with the first principle, STW practices use workplaces and communities as a context in which students can learn about the statistical elements of quality control processes in manufacturing, or how attorneys use various theories of human behavior in the courtroom. As preservice teachers learn how to integrate both academic and occupational subjects, students actually experience the connection between "theory" and "practice."

This philosophy would permeate the novice teacher's practice, as well as that of practicing teachers. PDSs similar to the ones described in Box A provide models for new teacher education arrangements that enable students and future teachers to see connections between student learning and future goals.

BOX A: Centers for Professional Personnel Development

At the Centers for Professional Personnel Development (a trio of PDSs located in Pennsylvania), educators receive preparation for general education certification, as well as for "professional education"—e.g., career guidance, School-to-Work, and other career exploration activities. Master teachers work with preservice teachers to accomplish the goal of this PDS:

To maintain a teacher education process that reflects the latest demands of the teaching profession, Pennsylvania business, industrial, and economic development, and issues reflected in federal and state legislation.

The Centers for Professional Personnel Development

Principle Two: Create a Learning Community

First and foremost, Professional Development Schools are designed to improve preservice education and create a "learning community" for novice professionals (Holmes Group, 1990, p. 7). Students in teacher education programs usually "intern" or "student teach" in a school to learn the skills necessary to be an educator. This internship usually occurs late in their baccalaureate program, and for many education students, this experience marks the first time that they actually "act the part" and test their abilities in a school setting.

Professional Development Schools use the school and community as the classroom— "a learning community in practice." In some PDSs, teacher interns complete methods courses at the school site and have the opportunity to discuss which "methods" they observed throughout the school that are most effective with particular students. Usually, the university instructor uses "real world" examples found in the school to teach the course. In this way, preservice students begin to understand theory and apply it directly to their current experience.

When applying STW principles, teachers are asked to go beyond the walls of the classroom to establish a "learning community." For example, students may have an internship experience at a bio-technology company or a bank. It is the educator's responsibility to integrate academic instruction with students' actual work and life experiences— similar to a preservice teacher's experience in a PDS. Teachers are responsible for helping students connect what they are doing in the classroom with what they are doing in the larger "learning community."

Principle Three: Teaching and Learning for Understanding for Everybody's Children

Unfortunately, the School-to-Work Opportunities Act is often shortened to "School-to-Work," thus leaving out one the most important reasons as to why it exists—to create opportunity for all students. Proponents of STW note the disparate experiences of children in the educational system today. Many are "tracked" into vocational education programs with little thought or discussion about how this might affect the student's future. At the same time, "college-bound" students feel compelled to forge ahead with college applications, with little thought about what a baccalaureate degree will mean for them and their future. The STWOA was designed to address the needs of all students—helping them become aware of other opportunities, new occupations and alternative future goals. An ideal PDS collaborative would be one in which activities are designed around these STW ideas and intentions. As mentioned previously, universities are looking for "exemplary" schools to partner with—those which will give their preservice students the best experience. This ultimately might be a school with many activities linking school to work and postsecondary education, as well as one with integrated academics— i.e., the definition of a STW system.

The Montpelier Professional Development Site (a collaboration between the University of Vermont and Montpelier High School) is an example of how a PDS can provide the framework to institute change for all students. Montpelier High School has established a program to develop Personal Learning Plans (PLP) for every student in the high school. The PLP initiative was designed "as a student-centered process with programs that support students in identifying and developing their strengths, needs, and interests so they become engaged in their educational experience." This initiative has been designed to realign teaching and learning to make school more applicable to students' lives.

Both preservice and inservice teachers at this PDS learn how to work with individual students to plan their school and future careers. For example, a student might identify an internship as one way to learn about a particular career. Educators are responsible for helping this student find an appropriate opportunity and relate it to his or her academic experience. A preservice teacher comments:

> *I think the PLP at Montpelier High School is something we studied 'ideally' in our education courses. It's something that every student would ideally be involved in, and they will. In education courses, you frequently realize that the ideal world doesn't always mesh with the practical world. Being involved with the PLP here, we'll be able to put it together— the ideal and the real— and really have the students involved and active and be a voice in their education. This stuff we're getting 'on high' at UVM is really being put to use in the real world.*

BOX B: TRINITY UNIVERSITY/ INTERNATIONAL SCHOOL OF THE AMERICAS PDS

The Trinity University/International School of the Americas PDS provides both a Master of Arts in Teaching and an experience in an "exemplary school setting for future educators. Students at this high school hope to be "the future leaders of the international community" (International School of the Americas, 1996). Preservice students benefit from watching what an integrated and applied curriculum looks like in practice—"Methods of instruction include seminars, lectures, internships, real-world projects, and conferencing" (International School of the Americas, 1996). After their fifth year, preservice teachers are able to bring their knowledge of diverse students and integrated and applied curriculum into their future school settings.

Another example of an effective partnership can be seen at the Trinity University/International School of the Americas PDS, where preservice teachers spend their fifth year as a full-time intern in a magnet school whose diverse student body concentrates on the social sciences, geography, politics, languages, and the fine arts of various regions of the world (See Box B).

Principle Four: Continuing Learning by Teachers, Teacher Educators, and Administrators

In a Professional Development School, experienced professionals act as role models and mentors for their interns. However, they also benefit from the on-site university faculty members from their partner institution. In many cases, teachers enroll in university courses that are offered at their school, or they enjoy "perks" from the university for working with preservice teachers. For example, current teachers at the Montpelier Professional Development Site receive "adjunct faculty" appointments at the University of Vermont when they work with student interns. They receive an identification card that allows them to use the university library and other facilities. This benefit is one example of a way in which teachers can continue their professional growth outside of the classroom walls. At the same time, they work with student teachers, helping them to integrate their academic knowledge (theory) with the practice of teaching. Concurrently, university faculty involved in PDSs gain practical insights about schools, the growing diversity of students, and effective teaching practices— all of which richly informs their teaching, research, and outreach to other schools and education groups.

The PDS model is an ideal framework in which to implement STW ideas. Because it is relatively new, current teachers may not have had the opportunity to learn about this initiative. Preservice teachers may have taken classes or have had other experiences which help them understand STW and its underlying theory. By connecting preservice and inservice teachers in a PDS setting, current teachers can learn from the novices— the inservice teachers become the "learner" in this instance.

Principle Five: Thoughtful Long-Term Inquiry into Teaching and Learning

Ideally, a PDS collaboration has research as a central tenet to its existence. Unfortunately, universities are often seen as the "owners" and "purveyors" of research and critical analysis. Ideally, a PDS

> *. . . Is not a laboratory school. What is needed is not just a working coalition of schools and universities as they are, but a powerful synthesis of knowledge to help us find out what the schools of tomorrow might be like. To make this happen, universities will have to take schools seriously and treat them with respect, and they will have to take a close look at their own behavior and values (Holmes Group, 1990, p. 60).*

In order for a PDS to be a learning community, universities must be willing to learn from teachers and the schools in which they work. Current practice is ripe with "action research" possibilities. Working with both current and preservice educators is one way in which university faculty can help establish a culture of inquiry into teaching and learning. By modeling research and its use in practice, teachers can begin to answer those questions that are of crucial importance to their work. Unfortunately, research is often difficult to embed in teachers' practice (See Box C).

The STW initiative is particularly appropriate to research, as its implementation is relatively new. For example, current and future teachers can explore ways in which career-based programs or student internships facilitate learning. These important questions must be answered for the STW movement to flourish. A PDS is an ideal setting to link the practice of STW in schools with the modes of research and theory predominant in the university.

BOX C: THE CHALLENGE OF DEVELOPING RESEARCH BASED ON PRACTICE IN A PDS

Embedding inquiry into the design of a PDS is one challenge often described by those who administer PDSs. Specifically, the Urban Teacher Education Program (UTEP) in Indiana identified lack of time as the main reason why preservice teachers and their experienced colleagues struggled with reflection and engaging in inquiry. This issue must be addressed in establishing a PDS, if it is to stay true to the fifth principle as outlined above.

Principle Six: Inventing a New Institution

The Holmes Group suggested a reformation in the way educators think about their roles and professional responsibilities:

> *The school's management, leadership, and faculty—including colleagues from the university—work together to invent a new organizational structure in line with the school's new purposes and principles about teaching and learning (Holmes Group, 1990, p. 67).*

The Montpelier High School/University of Vermont PDS is an example of how this principle can be reflected in practice. At Montpelier High School, student interns become immersed in the life of the school. They are able to experience a site-based management organizational structure—one consisting of faculty who are both administrators and teachers. This group, along with their faculty colleagues from the University of Vermont, has been instrumental in reinventing this school and its methods of addressing teaching and learning. Interns experience this reinvented institution first-hand—they are treated as "co-professionals" and are asked to participate in all aspects of developing the PLPs, as well as other innovations in the school. An intern at this PDS notes:

> *I think there are a lot of opportunities and a lot going on in this school. The process of change has been ideal for an intern. There's so much going on— sometimes it's almost overwhelming! As far as the professional development opportunities go, the school is definitely strong. Engaging in the PLP, for example, has been unique and valuable.*

This particular PDS is a model of a reinvented institution as defined by the Holmes Group because it has redefined what both students and educators should be learning.

Creating partnerships is a reinvention, or a shift away from the "status quo" in education. Public education and postsecondary education institutions are notorious for their autonomy— they provide education for particular groups, yet they rarely communicate about how these groups move within the educational system as a whole. To create a new education paradigm, educators in both K-12 and higher education systems must be willing to talk about what they do and how they do it. In a PDS, especially one in which STW ideas are infused (e.g., the Montpelier Professional Development Site), preparing future educators for work has been inextricably linked to preparing students to contribute to the world of work. This reinvention has powerful ramifications for all involved. Specifically, it creates understanding about how schools and postsecondary education institutions need each other to be effective and must be conscious of each other's role in developing both students and teachers.

CHALLENGES

Educators benefit from a preservice experience within a Professional Development School. This is especially true when the PDS in which they are based reflects current and innovative ways of teaching students, and future teachers are able to learn the basic tenets of School-to-Work. However, both PDSs and high quality STW programs are not easily established and maintained. There are a few obstacles that need to be overcome for a local PDS partnership to be successful.

The primary challenges focus on resolving conflicting fundamental interests and intra-institutional issues (Snyder, 1994).

In a PDS, stakeholders each bring different interests to the collaborative, and those interests compete for attention and resources. Teacher educators' main concern is the quality of the preservice program. They may be less interested in what students are learning— i.e., those whom the teachers are teaching. At the same time, mentor teachers in the PDS are mainly concerned with their students' learning. When issues of time surface, for example, mentor teachers tend to put their students first, ahead of the interns.

Intra-institutional issues also surface in new arrangements. The school and the postsecondary institution partner need to feel that working together benefits both of them in the long run. Working together may be a challenge, since participants are asked to do things differently in the name of the collaborative. However, collaboration is imperative to the viability of the PDS:

> *In an ideal state, the power to reinvent teaching, schooling, and teacher education is located in neither the university nor the school but in the collaborative synergy of the two (Cochran-Smith, 1991 as cited in Snyder, 1994, p. 118).*

The different cultures of schools and universities often clash, creating obstacles to understanding. At the same time, each institution is trying to incorporate new and innovative ideas about teaching and learning into its work (e.g., STW practices). These issues and barriers must be addressed for the partnership to achieve commonly-defined goals.

ACTION STEPS

Implementing STW is an important goal for the entire educational system— from preK to postsecondary education. This Brief provides ways in which the PDS model has been used as a framework to teach STW concepts to both preservice and inservice educators.

As one recognizes the ways in which a school or university is reflected in the previously mentioned principles, consider the following recommendations:

- Learn about and discuss the STW initiative— make it a priority in your professional development.
- Ask your partner college/university to provide meaningful courses or experiences which help you to better understand the implementation of a STW system.
- Ensure that your PDS makes a connection to and directly references the STW initiative.
- Recognize the different ways in which students and educators learn— e.g., through integration, application, and context.
- Extend the idea of a "learning community" to include experiences and opportunities beyond the school building for both educators and students.
- Understand and apply the central tenet of STW— creating opportunities for *all* students.
- Create opportunities for teachers to act as learners, and for learners to act as teachers.
- Provide enough resources (e.g., time) to educators so that they can inquire about and answer research questions which are critical to their work.
- Reinvent your organizational structure to reflect new ways of teaching and learning.

Both PDSs and the STW initiative represent new collaborative approaches to improving educational outcomes— one focused on new ways of strengthening professional teacher education, and the

other focused on improving education to work or career transitions. As noted above, these approaches have a number of shared themes and principles. Where appropriate, combining the practices found in PDSs and the STW initiative will create an important synergy for systemic educational reform involving schools, colleges/universities, and the business community. This synergy is crucial for sustaining both of these efforts until they reach a national level of implementation that makes them commonplace rather than unique or isolated opportunities.

REFERENCE AND RESOURCES

For more information about the theory and practice behind Professional Development Schools or the School-to-Work Opportunities Act, please refer to the following references and resources:

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The College of Education and Social Services of the University of Vermont and Montpelier High School (1996-1997). *Handbook for Interns in the Secondary Education Licensure Program of the Montpelier K-16 Partnership for Life-long Learning*. Montpelier, VT: Author.

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National Center for Research in Vocational Education (NCRVE), 2030 Addison Street, Suite 500, Berkeley, CA, 94720-1674. *www.vocserve.berkeley.edu*

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PROFESSIONAL DEVELOPMENT IN SUPPORT OF SCHOOL TO WORK JACKSON/HILLSDALE COUNTIES, MICHIGAN

Christine Mandl Pribbenow and Thomas Sargent
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BACKGROUND INFORMATION

In the name of educational reform, educators are increasingly being asked to establish partnerships between schools and businesses within their local communities. These partnerships can result in a more integrated and comprehensive educational experience for students. Two neighboring counties in south central Michigan provide us with an example of how collaborative efforts between educators and their communities can result in a comprehensive School-to-Work system.

The Jackson-Hillsdale School-to-Work (STW) Partnership represents the Intermediate School Districts of Jackson, Hillsdale, and most recently, Lenawee[1]. This partnership includes twelve public schools and one charter school in Jackson County, eight public schools in Hillsdale County, and thirteen public schools in Lenawee County. This region is mostly rural with the major population centers in the cities of Jackson, Adrian, and Hillsdale. This partnership reflects a continual commitment to the intent of the School-to-Work Opportunities Act (1994). This commitment can best be described in the partnership's own words:

> *The mission of the partnership is to create a comprehensive School-to-Work system that transforms the educational experience of the students in Jackson and Hillsdale counties. Each student will graduate from high school globally aware, technologically literate, technically competent and prepared to succeed in a career path designed to accommodate individual interests and abilities. (Jackson-Hillsdale STW Partnership Mission Statement[2]).*

This mission statement, along with other supporting documents, demonstrates the partnership's awareness that "School-to-Work is the responsibility of the entire community." Accordingly, business and industry have joined with schools to assume responsibility for implementing this initiative.

Jackson and Hillsdale counties are influenced by the large number of manufacturing and industrial companies located in south central Michigan. Business and industry leaders have communicated their need for better-prepared employees and hope that the STW initiative is a means to achieve these ends. The president of a local company asks:

> *How are we going to get these kids today thinking about (taking advantage of opportunities) tomorrow? That's why I'm heavily involved—anything that has to do with education and business that I'm aware of or I can be a part of—because I want to see it move ahead.*

An experienced high school teacher also stresses the importance of encouraging students to think about their future:

> *All of these children are going to be entering the workforce...and we're not being asked to address key issues because they have that intermediate step...go to college.*

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The Jackson-Hillsdale STW system responds to these concerns by preparing students to move from either "school-to-career" or "school-to-school-to-career."

Although the STW legislation came about only recently, Jackson-Hillsdale was fortunate to have enacted a Tech Prep initiative eight years earlier, which provided a strong comprehensive foundation for STW. As a result, the STW initiative in this region of Michigan is extremely well developed and has progressed rapidly. The design of the Career Prep program, formerly Tech Prep in this region, was based on two main components — guidance and curriculum. Professional development plans were then designed to assist educators in creating experiences for students, emphasizing guidance and instructional activities which were integrated, contextual, and most importantly student-centered (see section on Vandercook Lake for additional details). Career Prep naturally evolved into what has now become the Jackson-Hillsdale STW system. The following elements of the system are designed to help prepare students for their future:

1. ***Comprehensive Career Awareness and Planning***—This element includes career awareness and planning (K-12), the development of an Educational Development Plan, familiarity with Career Pathways documents, and portfolio exhibits.

2. ***High Academic Standards for All Students***—This element includes integrated academics and contextual learning curricula, project-based learning, authentic assessment, and use of the Manufacturing Technologies Laboratory (MTL).

3. ***Structured Work-Based Learning Opportunities***—This element includes job shadowing, unpaid work experiences, Cooperative education, apprenticeships, preceptorships, School-to-Work mentorships, and a Senior Transition Project.

Due to the breadth of the above-mentioned opportunities for students, STW implementation requires the involvement of people too numerous to mention. However, the following key players assume primary responsibility for assuring that STW is systemic and comprehensive: the School-to-Work County Coordinator, the Outreach Projects Coordinator, the Jackson County Intermediate School District (JCISD) Director of Vocational Education, and The STW Partnership Board, which is made up of 51% businesses and is the driving force behind educational reform in this region.

The primary responsibility of the School-to-Work County Coordinator is to act as liaison between businesses and schools. In this regard, she establishes and continues working alliances between these two groups. She also acts as a link between the twenty School-to-Work Coordinators who are located in thirteen schools in Jackson (serviced by the JCISD), and seven schools in Hillsdale (serviced by the HCISD), and the central STW partnership.

The Outreach Projects Coordinator provides resources, support, and information about gender equity, career planning, and career awareness for educators and students throughout the school districts. Much of her work involves disseminating information and training surrounding the Educational Development Plan (EDP[3]).

Staff of the Jackson Area Career Center also play an active role in supporting the career development of students in this STW partnership. The Jackson Area Career Center offers....

> *...A full range of occupational education programs in twelve career cluster areas. The Career Center houses some of the most advanced laboratories in the Jackson and Hillsdale region, and also provides a wide range of comprehensive support services. High school students and adults who have not yet completed high school requirements can attend at no cost. Occupational education programs are an*

important part of STW; because they certify skills achieved and provide graduates with evidence which can be used in attaining employment as well as upgrading work skills in their present jobs.

This center and the work of its staff are integral pieces of this partnership.

Jackson Community College (JCC), through collaborative efforts with the Jackson Area Career Center and Jackson-Hillsdale STW, provides a powerful means for developing seamless career preparation. The college offers articulated credit for certain courses taken at the Career Center, allowing the student to save time and money, and reduce repetitive training. They also offer dual enrollment and special admission to students. The EDP process is continued at JCC through the Employment/ Educational Development Plan (E/EDP). The expansion and implementation of the Jackson-Hillsdale STW system model depends upon the continuation of School-to-Work activities at the community college level.

THE NEED FOR PROFESSIONAL DEVELOPMENT

The breadth and novelty of this comprehensive STW program requires educators to take on many roles above and beyond the "typical" teaching responsibilities. The School-to-Work Opportunities Act was only recently signed into law (May, 1994). Accordingly, experienced educators may lack the knowledge about this initiative, which was absent from their previous professional preparation. Administrators in this partnership rely on professional development to help provide the information necessary for educators to implement the program as it has been designed. Unfortunately, teachers have a hard time connecting real-world challenges of teaching with the "stand and deliver" style of professional development so often employed. To address these needs, the Jackson-Hillsdale STW Partnership created a variety of "non-traditional" professional development opportunities for educators.

Administrators recognize the competing forces and challenges teachers face. One administrator noted that "Teachers need to be trained in how to meet the benchmarks established by the business community while still maintaining their curriculum." Educators agree with this analysis, yet fear being absent from their classrooms when off-campus professional development opportunities arise. For example, a missed day requires a substitute and can cause the teacher to fall behind in his or her curriculum. Another teacher cited the fears she confronted when given the opportunity to work in a business as an "extern." She described the experience:

For years (I had) asked business people and manufacturers to come in and speak to kids at career fairs and in our classrooms. And then all of a sudden I had the opportunity to go out to do an externship. It was so frightening for me that morning . . . what am I going to wear, where am I going to eat lunch? . . . I approached my externship from a human relations slant . . . and I would take that back to the kids . . . how they might feel as a new employee and how they should prepare themselves.

Despite these challenges, the Jackson-Hillsdale STW Partnership attempts to address these concerns by offering a variety of opportunities, each requiring different levels of commitment. In the following sections, three partnership sites are highlighted—each offering meaningful professional development in support of STW.

SPRING ARBOR COLLEGE BUSINESS FELLOWSHIP PROGRAM

Working in cooperation, the Greater Jackson Chamber of Commerce and Spring Arbor College (SAC) established the Business Fellowship Program[4] to encourage educators and corporate individuals to participate in meaningful collaborative workplace experiences. Corporate and educational participation is facilitated by the director of the Business Fellowship at SAC through building-level presentations the

distributing brochures throughout Jackson county. Educational applicants are interviewed by the program director and a panel of business members, in an effort to match them with corporate sponsors based on predetermined points of convergence. Since the program's inception in 1991, fifty-three educators have participated. SAC has recently been contacted by the Hillsdale Industry Development Commission requesting the expansion of the Business Fellowship Program into Hillsdale County. A separate but identical program is being pursued for educators and businesses in the Hillsdale area.

The Business Fellowship Program is based on a six-week summer experience. Educators spend thirty-six hours a week on the job making observations and working on activities that apply concepts learned through their work-site experience. In discussing the value of having business fellows participating in work-site related activities, a local manufacturer recalled:

> *(The fellow)... came up with a program that we're still using today. There are lots of things that teachers can do to help business. It is beneficial to the teachers' morale if you can get them out and show them that they are worth something, besides being a teacher.*

Four additional hours each week are spent on the Spring Arbor College campus discussing the implications of their experiences and their application to the classroom. A participating high school math teacher, addressing the application of her experience, stated, "it has increased my own ability to make math relevant to my students." Time and again the educators used surveys to document their elevated awareness of the role teamwork plays in today's workforce. For example, a Summer 1996 participant wrote:

> *I saw better than ever how much teamwork does affect the workplace. As teachers we are often isolated and do our own thing — we don't always use teamwork with our colleagues on a daily basis.*

This weekly collaboration is seen as an integral part For their endeavors, participants may elect to earn two graduate credits from SAC. Two of the seven participants in the 1996 program elected this option. The participating fellow is responsible for covering the current fee of $190 per credit hour. The documentation necessary to obtain credit include a written reflective paper on the summer fellowship, unit or lesson plans integrating the academic content with practical applications learned during the fellowship, and a portfolio documenting how the fellowship experience demonstrates attainment of employability skills. An additional graduate credit may be obtained by completing additional projects related to curricular integration of the business fellowship.

Members of the Greater Jackson Area Chamber of Commerce strongly support this professional development program for educators. Corporate sponsors provide $3000 per educator annually for participation in this program. A participating business leader justified his firm's participation by stating, "It's a cost associated with doing business." He went on to say that educators who participate in experiences such as these "have their eyes opened to what goes on in the real world and how business works and how people operate." The corporate funds are collected by the program director at SAC who distributes $2000 to the educator as a stipend and retains the remainder for SAC administrative costs. It was apparent when meeting with two of the local business leaders involved with this program that they value this experience, and that the benefits were mutual:

> *Both groups need to understand each other's point of view and then develop an action plan so that tomorrow's kids will have a better ethic, better understanding, and be ready to go out in the workforce. It's pretty shocking to find out they (educators) have no idea of how a business is run, ... one of the steps forward in education is to get teachers more acclimated to the business world.*

That's what we have to spend more time on in school, teaching these kids about the practical side of what life is all about.

Pre- and post-surveys are conducted with participants to assess their attitude toward and knowledge of the employability skills necessary for students to succeed in the workplace. These surveys provide insight into how a participant's attitude and knowledge has changed through participating in the Business Fellowship Program. Prior surveys have revealed that this collaborative experience leads educators and businesses to obtain a better understanding of the role each plays in educating the workforce. The professional development integrated within this program assists educators in their ability to see the connection between the world of work and the education that occurs in the classroom. Although it is still experiencing growing pains, the Business Fellowship Program at Spring Arbor College is providing outcomes and pedagogical shifts which promote the guiding principles of School-to-Work.

WESTERN SCHOOL DISTRICT

Western School District is a progressive school district located eight miles west of Jackson just off I-94. This district is composed of approximately 2,500 students in three elementary schools, one middle school, one high school, and an alternative/adult education program. The many activities and programs this district offers have been strongly supported by the local community. Recently, a major bond issue was passed to further promote technology within the district, as well as to add additional classrooms and media centers.

Teacher Externship Program

Over the past four years more than fifty-five teachers have participated in a voluntary one-day Teacher Externship Program which is open to 4th-12th grade educators and student teachers throughout the Western School District. It is an opportunity for educators to participate in work-based experiences which demonstrate how business and industry are operating in today's global environment. Educators who complete these externships return to the classroom and share with students their observations and greater understanding of the subject matter's application of to the world of work. Teachers value this experience, as one participant stated:

It is very interesting for me to get out in the community and see what actually is going on in those places . . . I just think it's a good experience for any teacher because it really keeps the connection [between] what you're doing and what you're trying to train the kids for.

The building principal, who strongly promotes the externship, shared the following about a recent participant:

(She) had a practical application for what she was teaching academically; she had never seen that connection before. Everything was curriculum and textbook oriented. She saw that what she was teaching people were really using in the real world. There was a direct application — she connected.

The teacher externship has provided educators with a professional development opportunity which allows them to bring practical applications of real life experiences into the classroom.

Many program-specific business-education partnerships have developed from the collaboration promoted by the Teacher Externship Program. An elementary externship participant recalled how one such partnership developed:

I visited a local manufacturer and videotaped my experience. Later I showed the tapes to my 4th grade class and they were very inquisitive about the kind of manufacturing production they saw. I was unable to answer all of their questions so I invited the president of the company to come and view the tape with my 4th grade class, and he showed up. After the initial visit to the classroom, he returned a second time to discuss how he got

started in manufacturing, his interests, and how he started his business. The students were impressed by his talk; they drew pictures of a variety of different machines and sent them to him. The president was so impressed with the drawings that he made copies of them and took them to an engineer and showed them around. The engineer asked, "Who made these?" The manufacturer replied, "a class of nine year olds." "Maybe we ought to do something with kids that are a little younger. You don't have to wait until they are in high school," stated the engineer. From then on every few weeks the manufacturer brought something in from his place of business for the class to work on. Occasionally this included bringing in other employees to talk with the class about what they did in the plant. On one occasion, he spent time teaching the class about the kinds of quality controls found in his plant and then he said afterward, "you know all of these kids that have learned to do this could come into my shop and work." The kids were thrilled to know this.

This example demonstrates how an area employer has begun preparing the future workforce by providing practical experiences for teachers and students. Businesses have the ability to impact a significant number of students through the teacher's externship experience.

The Partnership in Education is a local non-profit organization composed of school, labor, and community representatives which oversees partnership activities for K-12 students and staff in the Western School District. Educators interested in participating in the Teacher Externship Program contact a building-level coordinator, who makes all of the arrangements in cooperation with the partnership staff. The participating educator is required to make a classroom presentation applying the subject matter to the business. The partnership staff uses a locally developed instrument with both the participating business and the educator to evaluate the extern experience.

Student Career Awareness

A natural extension of the teacher externships are student programs within the district, which provide opportunities for students to participate in career awareness activities. Sixth-grade students' one-day job shadowing experience helps them consider future careers. In 1996 this program included over two hundred students and fifty-eight businesses. In the seventh grade all students participate in a technology job shadowing experience, which in 1996 included 160 students and 27 businesses. During the summer between their seventh and eighth grade years, students have the opportunity to participate in Success Camp. The camp allows students to "see real people and real jobs" in the various EDP career clusters. This past summer approximately forty students participated in Success Camp, with pre-service teachers from Spring Arbor college serving as counselors. The participants spend a week touring and learning about careers associated with various business and industry sites throughout Jackson and Hillsdale counties. The variety of career awareness activities provides a strong foundation for 8th grade students prior to their participation in the three-week EDP class.

Local evaluation of these programs suggest outcomes which include an enriched curricular presentation, increased student motivation to stay in school, and a sense of teamwork and mutual achievement between educators. In addition, the Teacher Externship Program was recognized as a 1996 Exemplary Program by the Michigan Education Association as part of their "Showcasing Public School Success" project.[5] The professional development which occurs through the Teacher Externship Program, in connection with the various career awareness activities for students, provides a promising model for implementing the guiding principles of School-to-Work.

VANDERCOOK LAKE SCHOOL DISTRICT

Vandercook Lake School District consists of five square miles with a student population of about 1,100. The students are serviced in three buildings, housing

grades K-2, 3-6, and 7-12. Residents of this district are primarily employed outside the community in manufacturing settings.

Integration

Vandercook Lake was one of the pioneers in the Jackson-Hillsdale STW Partnership. Their efforts stem from involvement in the Coalition of Essential Schools[6] initiative and the Tech Prep initiative, which later evolved into Career Prep Throughout Jackson County. A member of the high school Career Prep team explains,

> *Career Prep is really a partnership that was developed in our community between businesses and schools. . . it was an effort that was designed to start us networking together rather than in isolated efforts.*

These efforts have provided the foundation for a variety of activities which integrate many of the emerging pedagogical trends associated with STW. Under the guidance of the Jackson County Career Prep Team two specific components aimed at increasing students' technical and occupational literacy without remediation were developed. The first component focused on guidance, and the second one focused on curriculum.

The emphasis placed on the guidance component is evident in the variety of experiences to which students are exposed. At the elementary level teachers are supported by programs sponsored by the JCISD which include the Elementary Level Career Awareness Curriculum[7] and the EDP process. At the secondary level, students may participate in career awareness activities through job shadowing, service learning, the Community-As-School Program[8], or enrolling in programs at the Jackson Area Career Center. "The guidance component is so important to us . . . perhaps it's even more important than the curriculum," was a statement made by a Career Prep team member and supported by others.

The curricular component has impacted the entire staff. Infusing applied academics into existing math, language arts, and economics curriculum has provided professional development opportunities in curriculum and instruction. In addition to the applied curriculum the entire 7-12 staff was trained to use Analyze and Apply[9] materials. As described by an educator, teachers initially felt threatened by the introduction of these materials:

> *The mindset was that this was a curriculum that we were going to use. I think the training was helpful in that it showed that it is not a curriculum, it's not to be used as a curriculum. It's a supplement to what we are currently doing.*

After the training on these materials was completed, one person noted:

> *More of our teachers are using projects. They may not find them exactly in those books but they are developing their own units and projects similar to what you find in the Analyze and Apply materials. The training was very helpful in that way.*

Using project-based integrated projects has created excitement throughout the district:

> *The teachers were excited about it, the students were excited about it . . . attendance is 100% when you're doing this. Some of the kids who are just terrible, they're there . . . they are there every day.*

In addition to the areas mentioned previously, integrated project-based activities are also used in the student companies project and the reality store.

Common Planning

Many of the activities stemming from the Career Prep guidance and curriculum components take time, training, and planning to implement. During the past three years, these activities' development has been facilitated by weekly district-wide common planning time. Every Wednesday morning educators throughout the district come together either as a

building or as an entire district to address planning needs. During this two-hour block of time, the staff participates in a variety of professional development activities. In the past year these activities have included necessary training with curricular materials, touring local business and industry sites, and inviting individuals to address the challenges of changing to block scheduling. The high school principal believes that:

> *We would never be where we're at without (common planning) . . . I would argue to the hilt it's been the biggest reason why we've been able to get things done around here. . . the morale has been built among our staff members through the common planning time.*

The school board's support was instrumental in overcoming some barriers to implementing common planning time. This practice has proven advantageous to the Career Prep initiative, and various additional outcomes have been documented. One high school educator recalled how this time has facilitated an increase in the amount of instructional time:

> *When you figure out that the teachers in the middle and elementary schools are talking, and they know where the kids are coming from. . . those kids are going to be on-task more and the teachers are not going to have to back up and reassess the kids every year.*

Also, common planning has provided educators with a sense of continuity. One teacher noted, "It's like an inservice every week . . . we're able to go back and just finish what we're working on and have some sort of a continuous process." In the beginning, several of the teachers were skeptical of the value of this decision. However, after the first year of inservice the principal recalled how one of the skeptics stood up in front of the group and said, "this experience has changed my whole life and my attitude about my career."

The outcomes associated with the efforts in Vandercook Lake have been attributed to the district's vision and willingness to change. A Career Prep team member believes it is because...

> *...The administration and central office encourage us to take risks, try things, and say 'we support you. If it doesn't work adjust it, do whatever it takes. It's not like if you step out of line we're going to smack you back in line.' That atmosphere has allowed us to grow professionally.*

The willingness to change and the strong sense of community this district has created through its efforts with Career Prep and common planning have provided opportunities for professional development and student outcomes which truly promote the School-to-Work philosophy.

FUTURE DIRECTIONS

The Jackson-Hillsdale School-to-Work partnership continues to support local district coordinators and the expansion of local school district's efforts with STW. Many districts are working collaboratively on curriculum and other STW projects. They are continually building new partnerships with business and industry, as well as with Lenawee County STW efforts. A recent staff enrichment day implemented in the Jonesville Community Schools in Hillsdale County exemplifies the strengths of this partnership. The entire K-12 teaching staff, counselors, and administrators chose from 140 sites to participate in a one-day job shadowing activity. This pilot activity meets one local goal for professional development activities. The partnership is also working with other STW partnerships and the Michigan STW office to develop system measurements. In the words of a STW coordinator, "We see professional development for teachers as a 'must' in educational reform."

For additional information, please contact the authors or:
Shelly Jusick, Coordinator
Jackson County Intermediate School District
6700 Browns Lake Road
Jackson, MI 49201
(517) 787-2800

ENDNOTES

[1] The site visit was complete before Lenawee Intermediate School District was an active participant in this partnership. For purposes of this case study, only Jackson and Hillsdale will be described.

[2] Jackson-Hillsdale School-to-Work Partnership. (1996). A Comprehensive System. School- to-Work: Linking Business and Education in Jackson and Hillsdale Counties [Brochure]. Jackson, Hillsdale, MI: Author.

[3] The Educational Development Plan (EDP) is the cornerstone of the School-to-Work initiative in Jackson-Hillsdale Counties. Every eighth grade student completes an EDP after receiving approximately 30 hours of classroom training on career awareness, planning, decision-making, and testing on aptitude and interests. This written plan sets forth the student's career goals, identifies ways of attaining those goals and documents the education, skills, and experience attained in line with those goals. Each year students are required to revisit their EDP reaffirming or changing their choices. This instrument has been designed to encourage students to use their high school years most effectively by facilitating course selection based on career interest. The EDP serves as the center piece of the student portfolio which is an authentic assessment of student achievement and employability skills. Jackson-Hillsdale School-to-Work Partnership. (1993). Student Employability Skills Portfolio: Teacher Training Module. Jackson, Hillsdale, MI: Author.

[4] Spring Arbor College. (1996). Business Fellowship Program Guidelines [Brochure]. Spring Arbor, MI: Author.

[5] Michigan Education Association. (1996). Showcasing Public School Success [Brochure]. Lansing, MI: Author. Norton, K. (1996, November). A School-to-Work Process...at Work! Paper presented at the Annual Statewide Conference, Michigan.

[6] Michigan's regional center for the Coalition of Essential Schools (MCES) is based in Jackson, and provides a local resource for professional development. Vandercook Lake School District is one of 5 MCES member institutions located within the Jackson-Hillsdale ISD (3 entire districts and 2 elementary schools). MCES individual membership is made up of Educators, Administrators, Board Members, Business/ Community Members, and Parents. The regional center has been in operation for about three years and is funded largely by local foundations. MCES supports participating area schools in the improvement of instruction through the Foxfire Network. Locally the MCES provides support and professional development through their close consultation between an MCES coach and the Critical Friends Group at the school. In addition, MCES Critical Friends Dinners are held quarterly where participants from across the region gather together informally and address the significant challenges to reform in education.

Michigan Coalition of Essential Schools. (1996). Michigan Coalition of Essential Schools [Brochure]. Jackson, MI: Author.

[7] Elementary Level Career Awareness Curriculum: "Job Jabber" is a four unit action learning curriculum which teaches students in grades 2-6 about jobs. The curriculum focuses on activities which allow elementary students to realize the connection between their school subjects and

jobs. The "Job Jabber" units allow students to practice a variety of "life skills" including communication, team work, problem solving, and decision making. In each unit of this activity based curriculum students apply the knowledge they have obtained in all of their subjects. Well developed step-by-step teachers guides allow teachers to proceed through the content of this career awareness curriculum. This curriculum meets a number of the state of Michigan mandated objectives in core curricular areas. Jackson-Hillsdale School-to-Work Partnership. (1996). Job Jabber Career Curriculum Units and Video Packages: An Overview. [Brochure]. Jackson, MI: Author.

[8] Community-As-School is an individualized internship program open to seniors who would like to explore their career interest at an in-depth level. Students are placed at learning sites within the community and a Learning Experiences Activity Packet (LEAP) is developed. The goal of this program is to provide students high school credit for a work-based experience with professionals in their chosen field on a daily basis, thereby gaining career information, skills, and knowledge. Vandercook Lake High School. (1996). Vandercook Lake Community-As-School Program: Make the Connection. [Brochure]. Jackson, MI: Author.

[9] Analyze and Apply is a set of resource materials which provides teachers with workplace situations that integrate problem solving and real world examples. These project-based grade appropriate activities provide students with an approach to problem solving and an attitude toward learning that will lead to an advantage in the workplace. Analyze & Apply: 230 Clarendon Road, Suite 304, E. Lansing, Michigan, 48823-2617.

MONTPELIER HIGH SCHOOL: RESTRUCTURING THE EDUCATIONAL EXPERIENCE

Montpelier, Vermont

Christine Mudd Pribbenow and Thomas Sargent

May 1997

BACKGROUND INFORMATION

Set in the small (population 8,000) beautiful capitol city of Vermont, Montpelier High School (MHS) epitomizes that which is positive about school reform. Innovative educational restructuring is happening throughout this high school—from reforms in pre-service education for future teachers and the implementation of a site-based management structure for current teachers to the development of personal growth opportunities for students. These initiatives reflect the school's commitment to its purpose, and consequently, to addressing both teacher and student needs.

Montpelier High School was originally selected as a case study site due to its established professional development school (PDS), done in collaboration with the University of Vermont (UVM). Through further research, it became apparent that the PDS was not the only innovative practice in place at MHS. For example, the site-based management model at MHS intentionally enables teachers to help with the organizational and decision-making activities related to the functioning of the school. In addition, student-centered reform initiatives that connect educational and real world experiences based on the students' areas of interest are underway. All of these activities exemplify the pervasiveness of educational reform at MHS.

PROFESSIONAL DEVELOPMENT SCHOOL

Over the past four years MHS and UVM have developed a collaborative partnership in the form of a PDS. The Montpelier Professional Development Site, in conjunction with UVM, provides a unique experience for the secondary education students who intern at MHS. This program was designed to get pre-service educators (interns) actively engaged in the school:

> *The goal of the program is to provide participants direct experiences with a high degree of responsibility in the challenges and possibilities of working in today's educational and community-based organizations. . . Interns are seen as co-professionals in the school, who are able to teach and perform other adult roles in the life of the school: for example, as participants in planning, professional development, clubs, activities, and duties. Interns are involved with a variety of people in the school and thus are mentored and supported, as well as evaluated, through team efforts.*[1]

The pre-service educational team is made up of site coordinators, administrators, and faculty from the university and MHS. These professionals work together to create a productive experience for the student interns during their internship at MHS.

The model PDS structure involves a collaborative program between an elementary and/or secondary school and a post-secondary teacher education program. This collaboration is often expressed through reciprocal relationships. At the Montpelier site, for example, UVM faculty co-teach courses with MHS faculty at the high school. This provides accessibility for the interns and current MHS faculty who might

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be interested in taking a college course. UVM also gives adjunct faculty appointments to cooperating teachers as a way of recognizing their invaluable contribution to the intern's experience. MHS faculty are entitled to a UVM identification card which, in turn, provides them with access to the library and other campus services. UVM and the faculty at MHS work together to observe interns as they teach and perform other related tasks. Each intern is subsequently evaluated by this collaborative educational team.

Interns appreciate and benefit from the professional way in which they are treated. When discussing his experience at MHS, one intern noted, "We're valued in the classroom; it is truly a cooperative experience. I have had a unique experience at MHS—they treat me as a co-professional." Two MHS interns summarized the general feeling about the program, saying that they feel "very fortunate" and "consider it, professionally, to be the best year of [their lives]." These interns are especially excited to be involved in a school that has been undergoing many changes:

> *I think there are a lot of opportunities and a lot going on in this school. The process of change has been ideal for an intern. There's so much going on— sometimes it's almost overwhelming! As far as the professional development opportunities go, it's definitely strong. Engaging in the PLP[2], for example, has been unique and valuable.*

The Personal Learning Plan (PLP) is an area of reform for MHS that has given interns the opportunity to watch the school attempt to incorporate a very innovative student-centered initiative into the curriculum. One intern noted:

> *I think the PLP at MHS is something we studied 'ideally' in our education courses. It's something that every student would ideally be involved in, and they will. In education courses, you frequently realize that the ideal world doesn't always mesh with the practical world. Being involved with the PLP here, we'll be able to put it together— the ideal and the real— and really have the students involved and active and be a voice in their education. This stuff we're getting 'on high' at UVM is really being put to use in the real world.*

Other interns also describe the connection between theory and practice:

> *If you don't see it in the classroom, then it is just a theory— but when it (theory) is coming at you, you're like 'Whoa!' It's very powerful!*

> *It's nice to be able to challenge our professors, too. When the faculty tells us about all of these nice ideas and theory you say, 'Yeah, that's nice, but last week when Joey and Susie were giving me a hard time, that didn't really work.' So you can probe beyond the band-aid approach to things.*

The experience and knowledge that these interns bring to the classroom might be what deters some UVM education faculty from "buying into" the professional development school model. Because UVM students intern at a variety of different schools, the university faculty have different experiences at each of the cooperating sites, especially in regards to their level of responsibility. One UVM faculty member commented on this:

> *There is a range (of perceptions about this model) because we have been making this shift. It started out five years ago. Right now, site based observations are handled differently depending on where they (UVM interns) are. Some faculty are just appalled by it—they raise concerns about rigor and are threatened by the changes. . . The ideal is to have integrated teaching and learning for the interns—that's been a challenge for our UVM faculty. They are still stuck on lecturing. They say, 'But I have three hours of stuff to tell them each week.'*

University faculty identify the changing role and time commitment needed as impediments to their support of a program like the one at MHS. They are being

asked to provide current information, potentially at a site other than a lecture hall. They aren't necessarily rewarded for this increased commitment. At the same time, other UVM faculty question whether or not this model is even enough to address the necessary reforms in teacher education.

The current structure of this PDS provides for both semester-long and full-year internships. Students are either completing their Bachelor's or Master's of Education degrees. A UVM faculty member noted, "The shift is certainly moving to the graduate level in teacher preparation. I personally don't think that one year is enough. . . Even with our undergrads, two semesters is not enough. A five year program is ideal." During the 1996-97 school year, there were 11 interns; 8 of them interned for the whole year. There seems to be an advantage to interning for a school year because, as one intern commented, they are able to watch students "cycle through the year" and see the year "wrap-up."

UVM students intern in a variety of subject areas (e.g., English, history, geography, foreign languages, science, and math). There are a number of activities in which they are asked to participate. Their academic assignments include teaching three classes or two classes and an academic lab in their major. They also need to prepare for and teach a class outside their major. They are asked to become "immersed in the total life of the school" and "should use their time in the school to visit teachers and observe in classrooms both in and out of their academic discipline and at varying grade levels." Continuous professional development at MHS is also stressed to the interns. Their handbook states:

> *Traditional in-service days (dog and pony shows that are set up weeks in advance) are a thing of the past. Teachers shape the total development process and use each full or half day to address issues which they agree are in need of in-depth attention at that time. Teachers often organize and present parts or all of those days for each other, or the school as a whole stops to take stock of how the school is doing* (p. 9).

Interns are expected to be full contributors to this process.

All of these experiences help MHS interns build their "Internship Folio," which is useful for the Teacher Licensure Portfolio required by the state of Vermont. The following is a partial list of what the Internship Folio needs to include:

- Planning records, such as unit and lesson plans
- Actual lessons and units with evaluative and reflective comments
- Individual professional growth reflections, such as self-evaluations, journal entries, et cetera
- Observation reports.

The portfolio for licensure also asks for these types of documentation. Because interns are required to develop their own portfolio, they are ahead of their colleagues as they apply for licensure. A UVM faculty member describes this process as being "time and labor intensive," but very helpful for "building accountability and reliability." She also stresses the importance of learning how to do a portfolio. These interns are now able to apply this knowledge to helping students build their own portfolio—one similar to that used in the PLP. The portfolio guides the process for pre-service teachers to demonstrate their competencies.

The interns at MHS are challenged in this setting—they are being called on to act as a professional and participate in the total life of the school while reflecting on their own process as a teacher and a learner. As one UVM faculty member noted:

> *There is only so much an intern can take in at once. They are like the beginning teacher whose concern is survival in the classroom, as compared to an experienced teacher who can focus on a kid's*

learning or an expert teacher who thinks even more broadly. We're asking them to do all of that!

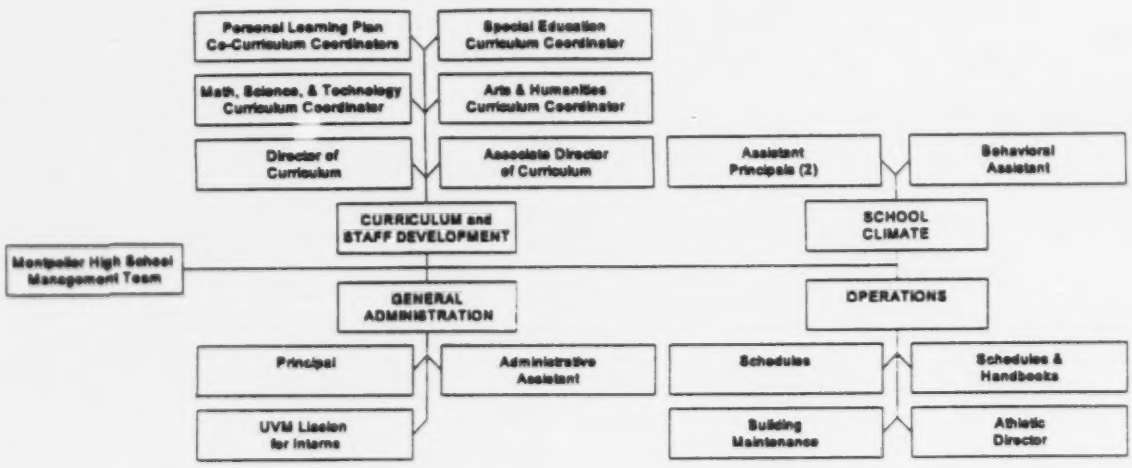
From the comments of the interns, however, they feel that being pushed and challenged is exactly what they need.

MANAGEMENT TEAM

Another innovative educational reform implemented at MHS is site-based management. The high school operates under the guidance of a management team. This team is made up of eleven members of the high school faculty who have classroom teaching responsibilities in addition to their roles on the management team. According to one of the management team members, this form of governance "gives you ownership of the school on two different levels—operational and instructional." Guided by a strong mission statement and a well-developed strategic plan, members of the management team provide educational motivation and guidance to their colleagues.

Members of the management team are given additional monetary compensation for their efforts and have a reduced teaching load. The team is broken into four divisions (see Figure 1) with various emphases. Meetings of the divisions are used to address the operational aspects of the facility and the educational process. As one team member stated:

> *We have had heated discussions on certain topics but we have learned how to attack the problem and not the person. . .we have to check on this every now and then, to make sure everyone knows we are not upset with each other. When the management team has arrived at a consensus, we walk away with a third of the faculty in agreement on a particular theme.*



Organizational chart for Montpelier High School Management Team

Figure 1.

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One of the concerns expressed came from a team member who stated, "We are still struggling with how we assure that it (the current management system) perpetuates itself and how we foster leadership within this system." In other words, some concern exists about how to get teachers who are not specifically a part of the management team involved in the life of the school .

The other concern expressed was related to the collective bargaining agreement between the district and the local teacher's union; now in the third year of a five-year contract. The union has not been overtly supportive of the team management structure, but fortunately has offered only minimal resistance. When negotiating the next agreement however, this issue is sure to be a source of contention. The feasibility of replicating this form of management structure at other buildings within the district will be based in part upon the continued success and acceptance of the program at MHS.

CONTINUOUS PROFESSIONAL DEVELOPMENT

Restructuring the weekly schedule at MHS has provided many opportunities for organizational activities that support the professional growth of staff. To make professional growth and development a part of every teacher's daily routine, the district and management team support and conduct weekly

<table>
<tr><th>Monday</th><th>Tuesday</th><th>Wednesday</th><th>Thursday</th><th>Friday</th></tr>
<tr><td>Period 1
Enrichment
7:45-8:40</td><td>Period 1
Enrichment
7:45-8:40</td><td>Faculty Inservice
7:30-9:00</td><td>Period 1
Enrichment
7:45-8:40</td><td>Period 1
Enrichment
7:45-8:40</td></tr>
<tr><td>Period 2
8:45-9:29</td><td rowspan="2">Period 2
8:45-10:05</td><td rowspan="2">Period 3
9:00-10:20</td><td>Period 2
8:45-9:29</td><td>Period 2
8:45-9:29</td></tr>
<tr><td>Period 3
9:32-10:16</td><td>Period 3
9:32-10:16</td><td>Period 3
9:32-10:16</td></tr>
<tr><td>Period 4
10:19-11:03</td><td rowspan="2">Period 4
10:08-11:28</td><td rowspan="2">Period 5
10:23-11:43</td><td>Period 4
10:19-11:03</td><td>Period 4
10:19-11:03</td></tr>
<tr><td>Period 5
11:06-11:50</td><td>Period 5
11:06-11:50</td><td>Period 5
11:06-11:50</td></tr>
<tr><td>Lunch A
11:50-12:22
Period 6A
12:25-1:09</td><td>Lunch A
11:28-11:58
Period 6A
12:00-1:20</td><td>Lunch A
11:43-12:13
Period 7A
12:16-1:36</td><td>Lunch A
11:50-12:22
Period 6A
12:25-1:09</td><td>Lunch A
11:50-12:22
Period 6A
12:25-1:09</td></tr>
<tr><td>Period 6B
11:53-12:37
Lunch B
12:37-1:09</td><td>Period 6B
11:31-12:51
Lunch B
12:51-1:20</td><td>Period 7B
11:46-1:06
Lunch B
1:06-1:36</td><td>Period 6B
11:53-12:37
Lunch B
12:37-1:09</td><td>Period 6B
11:53-12:37
Lunch B
12:37-1:09</td></tr>
<tr><td>Advisor Period
1:11-1:16</td><td>Advisor Period
1:22-1:27</td><td>Advisor Period
1:40-2:00</td><td>Advisor Period
1:11-1:16</td><td>Advisor Period
1:11-1:16</td></tr>
<tr><td>Period 7
1:19-2:03</td><td rowspan="2">Period 8
1:30-2:50</td><td rowspan="2">Student Support
2:00-2:50</td><td>Period 7
1:19-2:03</td><td>Period 7
1:19-2:03</td></tr>
<tr><td>Period 8
2:06-2:50</td><td>Period 8
2:06-2:50</td><td>Period 8
2:06-2:50</td></tr>
</table>

Figure 2: Modified long-block schedule utilized by Montpelier High School

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activities. One of these activities is a regularly scheduled Monday afternoon faculty meeting that is not a typical faculty meeting. The dissemination of information and other routine procedures are carried out by members of the management team throughout the week so more important inservice opportunities are able to take place at the faculty meeting.

By using a modified long block schedule (see Figure 2), educators also have professional development opportunities on Wednesday mornings, while students have a late start. Inadvertently, the modified long block schedule provided increased student/teacher contact time; therefore the implementation of the Wednesday morning faculty inservice met with little opposition from stakeholders. Wednesday morning faculty inservices focus on topics ranging from instructional pedagogy to student services. This format has allowed educators to obtain further training and update knowledge and skills that directly affect student performance in the classroom. By using current MHS educators to provide inservice training, the high school has promoted the development of a professional learning community. This weekly format of inservicing provides educators with an opportunity to implement, practice, and reflect on their training experience. Follow-up activities the next week may include further training or discussion of difficulties and concerns experienced during the week.

The organizational periods in the restructured schedule allow educators flexibility in their planning and professional growth. Period 1 is scheduled as an enrichment period, offering only four different courses and involving four teachers. On Mondays during this time, the remainder of the faculty meet as Educational Support Teams (EST) to discuss difficulties with teaching and student progress. Throughout the rest of the week, teachers utilize this time for collaborative or individual planning. In addition, the schedule provides teachers with a personal planning period.

STUDENT INITIATIVES

As mentioned previously, the schedule at MHS provides a great deal of flexibility and sufficient time to disseminate information and work collaboratively with other educators. UVM interns are active participants in all of this. Fortunately for students, these structures allow the implementation of two important initiatives for their own growth: the development of Personal Learning Plans and Community-Based Learning opportunities.

Personal Learning Plans

Educators and administrators at MHS have recognized the need for students to think about and address their own goals during their high school experience. The development of Personal Learning Plans (PLP) is one way in which educators are helping students connect their experiences in school to their future life and career goals. The PLP mission statement describes this intentional effort:

> *We believe that a Personal Learning Plan is a student centered process with programs that support students in identifying and developing their strengths, needs, and interests so they become engaged in their educational experience.*[3]

Educators at MHS called Teacher Advisors work individually with students to help them assess themselves and set personal and educational goals. Students then identify and list what resources they need to reach these goals while staff at MHS works with students and their parents/guardians to accomplish these goals.

The Teacher Advisor (TA) model has already been established at MHS with about half of the staff meeting with students individually throughout the school year. The organizational structure and schedule enables TAs to meet with students during Teacher Advisor blocks (see Figure 1). When the PLP model is fully implemented in the school, TAs, students, and parents/guardians will meet at the start of the school year, midway through, and at the end of the year. These

meetings will take place during in-service days and will ideally be facilitated and led by students. The TAs and their students meet every Wednesday throughout the school year. Once a month, the students and the TA will meet for both the TA period and the Student Support time block.

A current MHS senior noted the impact that PLPs will have on students:

> *It will be a good way for individual students to further their education on what they really want to do. It will make their education more meaningful to them. There are a ton of students, myself included, who just don't like coming here because we're not doing the stuff we want to be doing. But this will be a good way to incorporate things like community projects into school. You might be able to get out of school for a little while, take a break, but you're still learning. It's definitely going to impact you more out of high school than sitting in a classroom doing something that 20 other students are doing.*

PLPs address different learning styles and needs for students. Students can incorporate activities they might already be doing (e.g.: a community based learning project or athletics) into their current educational plans and goals. If other interests are not being addressed through traditional classes or modes of learning, the PLP offers flexibility for students to create the learning experiences they need.

Concerns have been expressed by those who fear the extra work and individualized attention the PLP requires. An administrator noted:

> *This requires a conceptual change about personal learning. There is some fear, I think, that this can be done. It threatens the teacher to think, 'Well, what if everybody needs something different. If everybody's individually learning, what am I going to do? I teach 20 kids and that's my conception of learning.' We're asking them to think broader than that.*

Fortunately two of the key pieces of the PLP—the TA period and the community based learning program—are already in place. However, as a current teacher notes, "there is still some confusion about what the PLP means and how it's going to work." During the first year of implementation (1997-98), the MHS staff will be watching intently to see if this model adheres to its guiding principles. A Personal Learning Plan will:

- Include all students
- Be student centered
- Be a partnership between students parents, school, and community
- Recognize and value each student as an individual
- Encourage personal excellence
- Be flexible
- Utilize a variety of resources
- Connect student learning
- Assess and evaluate the goals and of objectives of an effective PLP

Community Based Learning

The Community Based Learning Program (CBL) is a learning-by-doing experience for students that uses the community as an extension of the classroom. This student-centered endeavor is a partnership between the community, school, student, and parents. In voicing support for the CBL experience, an educator shared the following:

> *I became interested in CBL because it offered some of the things that I felt were missing when I was teaching . . . that was the opportunity for these young people to make a connection with the community . . . For the first time, I was beginning to see something happening in education that would give students an idea of what education is all about, some connection to their learning, some*

experience in the community . . . It was a beginning of tying everything one does in the classroom together.

Excited and enthusiastic students commented on the impact this experience has had on them:

It gives me the confidence . . . confidence to go out into the community and say 'I can do this.'

Your education is part of your future . . . these experiences are all like building blocks to what's going to happen in the future . . It connects me as a person to my own development and to my future. That's the connection that is important.

Students develop a learning plan in cooperation with the community site supervisor that outlines the expectations and activities of the participant. At least fifteen hours of service occurs during school, after school, and on weekends—typically for 1–5 hours a week. Students participating in this program may elect academic credit or service recognition points through the "Silver M" program. The Silver M is given to seniors for accumulating service points within the school and community. Students are encouraged to reflect upon their experiences through journal writing and projects. The culminating event in the CBL program is an opportunity for participants to share their acquired knowledge and skills with faculty and staff. The CBL and PLP complement the high school's future vision of having all students participate in a senior project and exposition as part of the graduation process.

FUTURE DIRECTIONS

Administrators and educators hope to continue to use the PLP approach as a restructuring movement in the school system. At the same time, they will continue to involve student interns in all of the day-to-day activities and evolution the school will experience. Taken as a whole, the Montpelier professional development site provides significant contributions to the connection of students and educators with the world of work, both inside the school building and out.

For additional information, please contact the authors or:

Owen Bradley
Montpelier High School
5 High School Drive
Montpelier, VT 05602
(802) 223-6368

ENDNOTES

[1] *Handbook for Interns in the Secondary Education Licensure Program of the Montpelier K-16 Partnership for Life-long Learning*. (1996-97) The College of Education and Social Services of the University of Vermont and Montpelier High School, .

[2] Personal Learning Plan (PLP)— "A student centered process with programs that support students in identifying and developing their strengths, needs, and interests so they become engaged in their educational experience."

[3] *Staff Manual for Personal Learning Plans at Montpelier High School* (1997- 98). Draft Proposal. Montpelier, VT: Personal Learning Plan Team.

BRINGING THE WORLD INTO THE CLASSROOM: BUSINESS EDUCATION COMPACT

Portland, Oregon

Christine Maidl Pribbenow and Thomas Sargent

March 1997

BACKGROUND INFORMATION

In response to demands for education to strengthen its connection to the "real world," educators and business leaders in the Portland, OR area have joined forces to lead this reform. The Business-Education Compact (BEC) is a not-for-profit organization which connects educators and students to the workplace. This organization is funded by membership dues, contracted services, grants, and contributions. The Board of Directors for the BEC is currently composed of 30 business leaders and 30 educators. This group of 60 forms the backbone for the Compact's programs and helps to implement its mission: "to promote educational excellence, relevancy, and expanded learning opportunities for *all* educators—*all* students."[1] Since its establishment in 1984, more than 1800 educators have participated in BEC programs and in turn have impacted more than 125,000 students. In addition, more than 300 businesses of a variety of sizes and interests have participated in these programs.

The Region 2 School-to-Work System benefits from the availability of BEC programs for both students and educators. Region 2 is divided into three areas: the East, composed of Multnomah County; Central, composed of Portland; and the West, composed of Washington County. The STW system is further divided into three components: Regional System Components, Sub-Regional System Components, and Building Level System Components. In each of these components, school-based, work-based and connecting activities are offered for both students and educators. For example, the BEC offers the following activities for students in support of the regional STW system:

- Paid and unpaid work-based learning experiences with employers
- National Engineers Week and other programs targeting math, science and technology
- Employer/site visitations
- Guest speakers
- School retention projects
- The School-to-Work Information System (SWIS)—a regional database linking educators, students, and employers.

EDUCATOR EXCELLENCE PROGRAM

Concurrently, the BEC offers invaluable professional development opportunities to help educators implement these programs and support STW principles. Among a variety of other programs, the BEC offers both a structured internship and a visitation program for K-16 educators called the *Educator Excellence Program*. This program was the primary focus of the site visit and will be highlighted here along with some related projects which complement the mission of the BEC.

Internships

I was provided with many more resource materials and hands-on activities. I am able to tie my

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curriculum much more closely to 'real world' applications. This makes a huge difference to the students and is reflected in their motivation. — Educator Intern

The BEC places K-16 educators (i.e., teachers, administrators, career coordinators, School-to-Work coordinators, and counselors) in worksite positions (internships) with Oregon employers as part of the Educator Excellence Program. These internships vary in length and activity—they are determined by the needs of the employer as well as the strengths of the intern. The BEC functions as the contractor and handles all of the details including project management, educator recruitment, payroll, supervisor training, orientation, and evaluation of the employer-sponsored internships.[2] The business is responsible for identifying a project in their company, selecting the intern, and paying approximately $2500-$5200, depending on the length of the project and the salary paid to the educator. In the last twelve years, more than 200 employers have participated and over 600 projects have been completed. Seventy-eight K-16 educator interns participated in the summer of 1996. The BEC hopes to reach a goal of 150 interns placed in 1997.

The following schedule guided the implementation of this program in 1996:

April: Project Description Booklets are distributed

April 15: Interview and Resume Skills Workshop

April 30: Educator applications are due for project descriptions

May 6-24: Employers interview/select applicants

June 20: Orientation meeting (overview, registration, and contract signing)

July 17: Mid-summer meeting for educators and business mentors

August 30: Educators submit Action Plans to the Business-Education Compact.

Educators identify the project in which they are interested and apply for that specific internship. They typically look for projects whose application would relate to their classroom needs or professional goals. The BEC and the specific businesses cooperate to ensure the intern's needs and interests fit well with a project. The placement will not be made if the educator might find the experience unproductive or unfulfilling. Unfortunately, there might not be a "match" for either the employer or the prospective intern and approximately 20% of the internships are not filled each year. More specifically, 20 internships were not filled and 20 educators were not matched to a project in 1996. This "mismatch" can be explained by the discrepancies between skills the employer is looking for compared to the applicant pool.

Action Plans

As mentioned previously, the BEC provides much of the support for the program's implementation. The Orientation program in June is instrumental in setting the stage for both the employer's and the intern's experience. The Program Manager of the Educator Excellence Program uses this session as an opportunity to identify goals and expectations for both the intern and their business mentor. She specifically encourages the mentor to prepare for the intern's arrival by setting clear expectations for the summer project and by providing the intern with an orientation to the company. During the orientation program in June, interns are also asked to begin thinking and preparing their "Action Plan," which is required to earn the mandated university credit for their internship experience.

The Educator Internship Guide[3] provides a wealth of information for the intern including the definition of an Action Plan:

The Action Plan documents how you translate your summer business experience into something applicable to students in your classroom. It's a practical application of skills and knowledge gained.

The goals are to:

1. Develop an action plan to put into practice new concepts that you have developed as a result of your summer internship.
2. Provide an opportunity for critical reflection on the usefulness of the action plan for your school district, school, or class.
3. View the elements of your action plan, your summer internship, and the school or school district's goals as a system of interrelated parts.

The following is an abstract from the Action Plan of a Composition Instructor from Mt. Hood Community College:

Learning Agility is the ability, and perhaps the willingness, to learn and use new concepts, programs, and/or strategies and to apply them to new situations. Since the term comes from a list of job competencies, learning agility also suggests that one is in control of one's learning and one's career. Community college students need to develop learning agility and self-direction for success in college and the workplace. I will include learning agility in my introduction to the freshman writing course I teach and in my discussion of writing assignments for which education and work are key topics. I'll also share with my colleagues how I plan to encourage students to develop learning agility.

This intern's experience as an Employee Development Strategist at a technology business helped her to meet the goals of her action plan:

1. to assist students enrolled in college writing courses.
2. to increase her ability to use a "coaching" style of teaching.
3. to present insights about her experience and the writing applications gleaned from the internship to divisional colleagues at the community college.

Both the Executive Director of the BEC and an adjunct faculty member at Portland State University evaluate each intern's action plan. Interns decide on the format in which they would like to present their action plan. Formats include, but are not limited to, written lesson plans, a video, a database of resources, strategic plans, proposals, budgets, or computer programs. The plan can also be developed individually or in partnership with one or more interns. The evaluators require a description of the goals the intern will address, the changes the intern hopes to bring about as a result of implementation, and a description of the target audience and an analysis of their learning styles.

Interns are also asked to include an outline of the units, exercises, modules, or presentations they will develop after their internship experience. They must be conscious of how the internship relates to their goals and how it will be implemented. All of this needs to be described in detail—including a time line, resources needed, and how it will be evaluated. Interns are also asked to include any materials, handouts, and a list of references on topics related to their final project. As mentioned previously, the intern receives course credit after completing their action plan.

Evaluation of the Educator Excellence Program

The Educator Excellence Program Manager expresses this view of the program:

Everybody wins in this situation. Businesses get a project completed and come to see teachers as professionals. Teacher interns get an inside view of business and go on to become spokespersons

and curriculum development leaders. Students are the recipients of whatever modifications or adjustments a teacher would make in their curriculum.

A participant from the summer of 1996 agrees:

It has given me exposure to the workings of corporate America and what the business world puts a premium on. Areas such as problem solving, independent work habits, responsibility to work on a project alone, and dependability are all things we stress in school and business also stresses.

Also, educators were asked to indicate the likelihood that they would apply the internship to their classroom: 92% said they were likely to "add new content to lessons or labs;" 97% said they "would tell their students about their experience;" and 94% said they "would share their experience with school personnel."

Business participants also had positive reactions after their experience with an educator intern. Evaluation comments included:

- *I learned more about what teachers are dealing with in the classroom.*
- *(The program is) A good way to participate in improving the educational environment and creating a connection to the school system.*
- *Words used to describe characteristics of teacher interns included: wonderful attitudes, extremely professional, dedicated to completing quality work, and highly self-directed and focused.*

In 1996, 97% of the internship mentors reported that the educator "met" or "exceeded" expectations; 100% were "satisfied" or "very satisfied" with the educator's overall performance; and 97% of the mentors said that they would be willing to participate again if they had another project.

From both the interns' and mentors' responses, it is obvious that these experiences are meaningful. However, many teachers do not participate in internships. They often value their time off during summer and may have other commitments during that time. Also, there is not always a good fit between the projects available and an educator's interests. Businesses might not participate due to the expense or time required to develop a project and mentor the intern. For these reasons, the Business-Education Compact offers the Visitation Program for educators and businesses to connect without a substantial time or money commitment.

VISITATION PROGRAMS

The BEC offers two types of visitation programs: career-focused and curriculum-focused. The career-focused opportunity is available for K-16 educators who can only make a one-to two-day commitment. There are three purposes of these career-focused visits:

- To gain awareness of the changes and challenges in today's workplaces
- To gain awareness of types of career opportunities, required preparation, and occupational outlook
- To create an opportunity to build partnerships with local businesses.

The BEC sets up visits to a variety of businesses depending on the educators' interests. For example, four sites could be visited in two days. These opportunities are open for classroom teachers, counselors, STW coordinators, and administrators.

The curriculum-focused visitation days usually occur over a four-day period of time. Each day is devoted to the application of subjects (e.g., math, science, language arts, social studies) in the workplace. While career education is definitely one of the goals of the visitations, they are primarily designed to help educators understand how subjects are applied in business. They then bring back these ideas and

incorporate them into their teaching practices. Single-day visitations have also been arranged to meet the needs of various educators. The Portland Community College (PCC) faculty have been actively involved in the curriculum-focused visitation days. For example, several PCC Math faculty recently spent four days exploring how mathematical concepts are used in the workplace.

The community college faculty noted the difference in their needs compared to K-12 faculty. Their students, for example, are usually working adults and already have a connection to real-world applications of their classes. Community college faculty need to be able to have opportunities which allow them to stay ahead of their students. For these reasons, both the visitation and internship opportunities must be geared to their specific needs. The BEC works very closely with its clientele, both in business and educational settings, to make sure that these concerns are addressed and their needs are met.

S.W.I.S. PROJECT

In July of 1995 the BEC was given approval by the Regional Workplace Quality Committee to develop and manage the School-to-Work Information System (SWIS). This computerized matching system allows educators and students to identify and participate in workplace learning opportunities throughout the region. Currently forty-eight secondary schools and two Community Colleges in the Metro-Portland area are utilizing this system, reaching more than 30,000 students and educators. Initially, local STW coordinators have been trained and are operating the system at each location.

The SWIS system tracks students by name and maintains a record of student participation in the associated workplace learning opportunities. This system also allows easier placement for educators and students and identifies a variety of workplace learning opportunities. The twenty-one categories in which matching occurs include:

special projects
intensive work experience
job shadowing
school based enterprise
mentorship
school directed project
structured work experience
school agricultural project
cooperative work experience
professional/technical education
internship
pre-employment training
practicum
tours/visitation
clinical experience
simulations
registered youth apprenticeship
basic educational skills training
non-registered youth apprenticeship
paid job opportunities
community/service learning

Gradually this system will be expanded to include elementary and middle school students, serving as well as a marketing and matching device for the Educator Excellence Program.

METALSWORK PROJECT

The Metalswork project unites industry, government, education, and community groups to focus on improving the skills of the emerging, transitional, and existing workforce in the metals industry. With the facilitation of the BEC, the Oregon Precision Metal Fabricators Association (OPMFA) and the Oregon Metals Industry Council (OMIC) have entered into school-to-work partnerships with ten high schools and six middle schools in the metro Portland area to pilot innovative ways to teach students and educators about the metals industry. Teachers and counselors from the schools participate in summer and school-year internships in metals companies to learn firsthand about the industry and translate their knowledge into information for students. In the summers of 1995

and 1996, more than twenty educators completed internships at local metals companies and over 2,300 students received information about the industry.[4] Industry representatives and educators are developing curriculum to deliver metals-related knowledge and skills integrated into various academic and professional-technical courses. The BEC program director stated that, "the curriculum being developed in this process is seen as a living document, one that will grow and change over time to meet the needs of the industry and the educational process." With the assistance of the Business-Education Compact, companies and educators are involving students in firsthand experiences in the companies, including job shadowing and in-depth internships.

Additionally, two alternative schools are utilizing the PCC curriculum designed by the educators and industry leaders to provide an innovative program for students. Students are introduced to the skills and knowledge necessary to enter into the metals industry. The Metalswork project, staffed and promoted through the BEC, provides information about pathways into and within the metals industry. This project intends to generate greater interest in careers related to the metals industry and to reinforce the importance of basic skills in math, science, and communications.

In September 1995, a workforce needs assessment[5] for the metals industry was undertaken by the OMIC and the Portland Development Commission, on behalf of four industry associations. The goal of this assessment was to provide data on the future demand for production workers in the metals industry in the Portland metropolitan area. Eighty-nine companies, representing approximately one-fourth of the total metals jobs in the metro area, responded to the survey. When the survey asked candidates to respond to the question, "Why doesn't the industry have the workforce it needs?" the respondents noted that teachers at all levels do not understand the current state of the industry, its use of technology, competitive factors, management, and quality control structures. The BEC Metalswork Program Director stated, "Before we can do STW with the students we must have STW for educators."

FUTURE DIRECTIONS

To understand the effectiveness of the BEC over the past decade, one must appreciate the supportive state environment in which the BEC operates. Since 1987, Oregon has enacted six pieces of legislation which have created a framework guiding the implementation of School-to-Work throughout the state.[6] Through the efforts of fifteen Regional Workforce Quality Committees, students and educators can participate in work-based experiences that connect to school-based learning. During the implementation stages, student achievement is being documented by the number of students attaining a Certificate of Initial Mastery (CIM) and a Certificate of Advanced Mastery (CAM). School-to-Work activities provide the career awareness and exploration components of the CIM and the avenue for the work-based experience in the CAM. These standards are providing the basis for a series of criterion-referenced assessments that will be associated with other summative materials to document student attainment. The legislative action taken evidences is a commitment throughout the state to embed the School-to-Work initiative within school improvement efforts.

The Business-Education Compact will continue to offer opportunities for both educators and students to achieve the goals and competencies outlined in these statewide initiatives. As the BEC extends its regional impact across the state and the SWIS project continues its refining growth, new internship sites will be established and an increasing number of educators will have the opportunity to "bring the world into their classroom" through internships and other professional development opportunities.

For additional information, please contact the authors or:
Tamara Busch-Johnson
Business-Education Compact
3800 SW Cedar Hills Blvd., #200
Beaverton, OR 97005
(503) 646-0242

ENDNOTES

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THE ADVANCED TECHNOLOGY ENVIRONMENTAL EDUCATION CENTER: A GLOBAL EFFORT

Bettendorf, Iowa

Thomas Sargent, Christine Mandl Pribbenow, and Francisco Castellan
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BACKGROUND INFORMATION

The Advanced Technology Environmental Education Center (ATEEC, pronounced "A-Tech"), uses a globe as its logo[1] to symbolize the breadth of impact this center hopes to achieve in the field of environmental technology education. In the three years of its existence, ATEEC has reached hundreds of educators and others interested in creating a "national world-class network" of community colleges working to maintain the environmental technology workforce. The Director and administrators of this Center use a variety of different formats and programs to achieve their mission and goals. The following is a description of ATEEC and its importance as a resource to K–16 environmental technology educators.

ATEEC was established through a National Science Foundation (NSF) grant awarded in October of 1994. The Center's vision is to create a national network of educational institutions that are "producing and maintaining the environmental technology workforce, addressing the diversified needs of industries, and promoting the progression of transfer students to higher education."[2] Specifically, ATEEC's mission is to advance environmental technology education through curriculum development, professional development, and program improvement in the nation's community colleges and high schools.

Guided by a National Advisory Board, the Center's Director collaborates with three organizations in implementing and achieving the goals outlined in the NSF grant. For example, the Hazardous Materials Training and Research Institute (HMTRI) is an association between the Environmental Technology programs at Kirkwood Community College and the Eastern Iowa Community College District. HMTRI produces and provides environmental technology curriculum and instructor workshops to community colleges nationwide. The Partnership for Environmental Technology Education (PETE) is a non-profit organization established "to provide leadership in environmental education and training through community and technical college partnerships with business, industry, government, and other educational providers."[3] Their regional network provides the structure necessary to disseminate and congregate educators and business leaders in the field of advanced environmental technology. The University of Northern Iowa hosts the annual Fellows Institute and is the university of record for educational credits associated with the Institute. In addition, this educational institution provides programs for students, educators, and the general public about conserving energy and preserving the environment.

The work that has been completed to date, as well as its future directions, are driven by ATEEC's goals. These goals are:

1. To strengthen math, science, and technical curriculum and instructional materials that support environmental technology education for all students.
2. To strengthen the nation's environmental technology programs by providing professional development opportunities for community college and secondary educators.

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3. To strengthen environmental technology education by providing support services for program improvement.

The ATEEC Director explained that one of the Center's jobs is to "empower schools at the local level to be the best they can be and give them some tools to be able to do that." She further described a "team" approach in the administration of ATEEC and how this approach has been essential to ATEEC's functioning and success. Finally, she stressed the importance of maintaining a national scope and emphasizing professional development for faculty at all educational levels. By examining ATEEC's goals and their subsequent implementation, one can better understand the impact this Center and its partners have had on educator's professional development in the field of environmental technology education, and the network's broader connection to School- to-Work.

ATEEC GOAL 1: To strengthen math, science, and technical curriculum and instructional materials that support environmental technology education for all students.

ATEEC FELLOWS PROGRAM

During those treasured summer months when educators could choose to take time off from education, the "cream of the crop" in the fields of math, science, technology education, and environmental education join forces to enhance the quality of environmental technology education. These thirty educators convene for the ATEEC Fellows Institute which occurs during two weeks in June on the University of Northern Iowa's environmentally friendly campus. These educators meet to achieve two general objectives of the Fellows Institute. The first is to achieve ATEEC's goal of strengthening math, science, and technical curriculum and instructional materials that support environmental technology education for all students. The primary outcomes associated with that goal are to:

- Continue developing model articulation programs
- Recommend exemplary math, science, and environmental technology instructional materials
- Identify and create instructional activities for teaching real-world applications in math, science, and environmental technology
- Evaluate and improve an instrument that educational institutions can use to assess their environmental technology programs.

The Fellows Institute was designed to achieve these objectives by relying on current high school and community college instructors' expertise curriculum development and implementation.

The Institute's second objective is to provide an intellectual activity which invigorates or renews the Fellows, enabling them to teach current environmental science objectively and enthusiastically. At each Institute, the Fellows critically analyze an environmental issue, each of which has been linked to a case study. The Fellows make group presentations focusing on the science, policies, and controversies surrounding each issue. The issues include:

- "The State of the Earth." A case study contrasting the views of Al Gore and Gregg Easterbrook
- "Environmental Disasters." A case study focusing on the Exxon Valdez oil spill
- "Risk Analysis and Assessment." A case study examining the peaceful use of nuclear energy
- "Environmental Health." A case study centering on emerging infectious diseases.

The Fellows are given readings related to a specific presentation and assigned to a group well in advance of the Institute. The two-hour presentations are

evaluated by two instructors for content and pedagogy using the criteria of "depth, understanding, related readings, quality of presentation, and stimulation of discussion." The instructors discuss the evaluations with all the individuals in each group shortly after the presentation. Grades are based on the results of the evaluation and a follow-up written summary of all of the presentations.

The process of becoming a Fellow is a competitive one. ATEEC administrators established composition and selection criteria so that the resulting group would represent a variety and breadth of subjects and educational levels. For example, each of the six PETE regions are represented by five educators, providing a national scope of interest. At the same time, the total composition of the Fellows approximates one-third community college environmental technology instructors, one-third community college math and science instructors, and one-third high school math, science, or technology education instructors.

Other criteria used to choose the group of Fellows include:

- Master's degree in a related field
- Current faculty member in a 2-year college or high school
- Six years of teaching experience or a combination of teaching and work experience
- Demonstrated experience in formal institutional assessment/evaluation
- Demonstrated articulation program leadership (e.g., School-to-Work, Tech Prep, 4+2+2)
- Demonstrated experience in selecting exemplary instructional materials
- Demonstrated experience in identifying and creating "real-world" instructional activities.

As mentioned previously, Fellows are asked to critically evaluate curriculum, program assessment instruments, educational activities, and instructional materials during the Institute. Therefore, participation as a Fellow requires a broad background of experience. ATEEC ultimately decides the final composition of the group to meet the needs and goals of the subsequent Fellows Institute. Once chosen, a Fellow receives a stipend of $1000 for working on grant objectives. Two graduate or undergraduate credits are awarded to each Fellow. In addition, ATEEC pays tuition and fees, dormitory housing costs, and transportation expenses.

Each of the three Fellows Institutes have used different schedules and have met different objectives during its two-week meeting at the University of Northern Iowa. In 1995, the Fellows worked concurrently on "The State of the Earth" case study and an NSF grant objective of identifying the math, science, technical, and critical thinking knowledge and skills needed in the field of Environmental Technology. In 1996 and 1997, the Fellows spent the first week working intensively on NSF grant objectives. After the first week, the Fellows moved into the more classic "graduate course" portion of the Institute— reading texts, writing, and presenting an assigned topic related to environmental education. In 1996, the Fellows recommended a model articulated "4+2" curriculum in environmental technology to link high school and community college programs. The 1997 Fellows recommended minor changes to the model program and incorporated the national math, science, and technology education standards. They also worked on the "Four-Year Program Articulation Project," which was designed to link environmental education programs between community colleges and four-year institutions. A complete copy of the model program is on ATEEC's Website (*www.ateec.org*). These Fellows also worked on the remaining outcomes of the four objectives listed earlier in this report.

Fellows Institute Reactions

The Fellows Institute has become a very prestigious opportunity among the community college faculty.

—ATEEC Project Director

ATEEC has provided many opportunities for development and growth both to the professionals in the field as well as to the environmental technology field itself. Benefits have also been noticed at the community colleges or high schools where the Fellows work. For example, a community college president was clearly pleased with the changes made at the institution following a faculty member's participation as a Fellow. A high school faculty Fellow established "credibility" when colleagues discovered his participation in the Institute. As a result of his participation, he was asked to join committees and participate in ways he hadn't before this opportunity.

The ATEEC Director describes the Fellows as the "innovators" in their respective institutions. They are:

The faculty who don't want the status quo. They are eager to bring something new back to their classroom, to their students, and to their institution. We have tried to build on that energy and have asked them to go back to the faculty in their area...and try to...get them interested.

The Fellows find the opportunity a very fulfilling chance to network with others in their field and find out about what other faculty are doing in their institutions. The Fellows are required to participate and help meet the objectives mentioned previously. As the Director of ATEEC notes:

[The Fellows] do a tremendous amount of work throughout the year...actually almost all of them have gone to their regional instructor conferences and have done workshops for us.

Possibly because the Fellows receive a stipend and are required to continue to "work" throughout the year, they may feel that this is a "summer job" unrelated to their individual growth. On the other hand, others have recognized the continual networking and noted, "it's not just two weeks, it's professional development."

However, program administrators do not underestimate the value of this experience. Putting information, knowledge, and skills into the hands of the faculty Fellows was intentional. According to a PETE Regional Director,

this is where the rubber meets the road. It's on the front line, it's those instructors...who are doing the work. They are the people rolling up their sleeves and making things happen. And because of that, they keep rolling up their sleeves and they keep talking to each other after they leave. . . Looking back ten years from now at the effect this had on the community college environmental programs. . . It was the ATEEC center that brought people together.

Fellows mentioned the changes in their teaching—not necessarily in their pedagogy, but in their feelings about environmental education:

The class changed me. . . you do self-reflection. . . and evaluate what you are doing.

I've taught less of the technical, hands-on material, and more of the "bigger picture."

I think the best we can do is teach them (students) critical thinking and problem-solving.

(The Fellows Institute) gave us a much more realistic view of the real problems out there.

The Fellows also identified problems within the field of environmental technology in which they received their education. By participating in the Fellows Institute, they hope to improve their own teaching to enhance the education of current students:

I think one of the problems in the educational system is the gap between what I learned twenty-five years ago and what's going on now. If you don't retrain...you don't have those types of liaisons between industry and education or government

and education. I started getting involved in other things because now I know a little bit more about what's going on than what I knew when I graduated from college. Now I know how I ought to be educating my students about what is happening right now.

It is apparent why this dedicated and motivated group of faculty were chosen to work as Fellows consequently representing ATEEC in conferences and in their institutions across the country. The experience has been invaluable to them professionally and to the field of environmental technology. Fortunately, ATEEC has developed a number of other ways to reach those unable to attend the Fellows Institute. The following sections describe these opportunities.

To address the second goal of ATEEC's mission, the following professional development opportunities have been established. Because of these professional development opportunities, over 600 educators in the field of environmental technology education are reached annually.

ATEEC GOAL 2: Strengthen the nation's environmental technology programs by providing professional development opportunities for community college and secondary educators.

FAST INTERNSHIP PROGRAM

The Faculty Associates in Science and Technology (FAST) internship program was part of the initial NSF grant to ATEEC. In the first year of implementation, this program placed 16 faculty interns in a variety of industries and laboratories. Due to the cost associated with this component, the project was spun off into a separate NSF grant the following year. Although the new grant is administered by the PETE organization, this professional development opportunity is very much linked to ATEEC and its mission. The goals of the FAST internship program are to:

- Provide educators with entry into industry to refresh and refurbish their knowledge and skills
- Develop a resource to identify industry's current thinking and needs regarding curriculum and skills.

In emphasizing the importance for participation in this program, a Regional Director for PETE stated:

The program takes faculty who in many cases have never worked in industry, and sends them out into local industry to help them establish a relationship. That industry then can become a resource (by contributing) adjunct instructors, curriculum, lab resources, equipment, chemicals, and student internship sites. So there is some real value linking that faculty member industry.

The six regional PETE directors facilitate corporate and educational participation. Each director selects six applicants to participate in the program based on the responses provided on the initial application and applicant's letters of support. The chosen applicants are then matched by the director with an industry sponsor. In the second year of this internship program, approximately 36 interns were placed across the nation.

The FAST Internship Program is based on a four to six-week summer experience. Educators spend 40 hours a week working on their assigned projects, observing and applying concepts learned during their work-site experience to the academic setting. The stipend for participation in this program is approximately $3400. However, this stipend may vary based on the industry sponsor's agreement with the regional PETE organizations. Typically, industry partners support this professional development program by providing a work-site mentor, a project for the educator to be involved with, and at least $1700 toward a stipend for the educator. The stipend is distributed in three equal installments: the first is given prior to participation to assist with travel and

accommodations, the second is given during the internship, and the third is given when all of the required documentation has been completed.

The program's impact is evaluated by an internship survey and an exit survey. The survey completed during the experience is a collaborative effort between the educator and the industry partner. The exit survey highlights how the intern intends to utilize the knowledge and skills obtained during this experience to impact other's education in the field of environmental technology education.

REGIONAL INSTRUCTORS RESOURCE CONFERENCES

Held annually in each of the six PETE Regions, these two-day conferences provide instructors with current information related to the effective implementation of environmental technology education. ATEEC provides incentives/stipends for participants, as well as financial support for presenters and keynote speakers. Individuals involved with the Fellows Institute often provide some of the presentations. Examples of topics covered at the 1997 South Central PETE Instructors Resource Conference included, in part:

- What Community Colleges Can Provide Small Business
- 2+2 Environmental Articulation Programs
- K-12 Environmental Education Models
- Developing and Nurturing Industry/Education Partnership
- Field trip to Pollution Prevention Program in Rocky Mountain National Park .

Each regional conference draws approximately 100 participants annually. Participants are primarily community college faculty in environmental technology, chemistry, and allied health, as well as college administrators. A PETE regional director stated that:

> *It's a great opportunity to network and share common concerns. . . because they are close enough that they have many of the same geographic concerns.*

In addition to the larger regional Instructors Conferences, smaller train-the-trainer workshops are held within each region to train instructors in areas such as green chemistry and minimizing chemical waste.

Because certain individuals are unable to attend the regional conference and workshops, ATEEC and PETE regions will conduct a national satellite teleconference in April 1998 on environmental technology careers. This event was developed to help a greater number of K–12 educators access the professional development opportunities and resources of ATEEC and PETE. This national teleconference will be received at sites located at area community colleges who will, in turn, invite and encourage their feeder high schools to participate in this event.

ATEEC GOAL 3: Strengthen environmental technology education by providing support services for program improvement

ATEEC NEWS & WEBSITE

In just over two years, it is apparent that through its newsletter and website ATEEC has become a clearinghouse of support services for environmental technology education. *ATEEC News* is a quarterly publication with a circulation of more than 6,500 individuals, including administrators and staff from community colleges, high schools, universities, business and industry, and federal agencies. This publication provides information on issues affecting environmental education, a review of educational and career opportunities in environmental science and technology, and updates from each PETE region regarding activities, conferences, and workshops.

The ATEEC website (*www.ateec.org*) has become one of the organizations' greatest avenues for disseminating information. The menus on this site include: Curricula/Programs, Environmental Links, Faculty Development, and Publications.

As access to the Internet increases, especially at the secondary level, this site is capable of providing current resources and support to environmental technology educators.

FUTURE DIRECTIONS

The National Science Foundation recently renewed the ATEEC grant for three more years. Therefore, ATEEC will be able to continue its mission, assisting the nation's high schools and community colleges in evaluating and improving environmental technology curricula. Presented below are the specific goals and objectives for 1998 through the year 2000.

ATEEC GOAL 1: To strengthen math, science, and technical curriculum and instructional materials that support environmental technology education for all students.

Objectives:

- Develop a model for program success, incorporating an assessment instrument and a "how-to" manual for use by two-year college instructors.
- Provide model high school and college curricula and a directory of resources that incorporate national math, science, and technology education standards.
- Continue to identify and validate the science, math, technical, and critical thinking knowledge and skills required in environmental technology occupations.
- Continue to develop/collect, evaluate, and disseminate activities for teaching "real-world" applications, as well as a list of recommended instructional materials in the disciplines of math, science, and environmental technology.
- Continue, through the ATEEC Fellows Institute, to bring together high school and two- year college instructors selected as curricular advisors.
- Develop an environmental technology training module emphasizing a strong knowledge/skill base in science and math for secondary and two-year college instructors.
- Assess the needs of high school faculty regarding environmental instructional materials and professional development opportunities.
- Develop a resource document listing professional certifications and standards for environmental technology occupations.

ATEEC GOAL 2: Strengthen the nation's environmental technology programs by providing professional development opportunities for community college and secondary educators.

Objectives:

- Continue to conduct regional professional development instructor conferences for high school and two-year college environmental educators.
- Continue to provide professional development for high school and two-year college instructors selected to participate in the ATEEC Fellows Institute.
- Conduct national forums of high school and two-year college educators, developing products to enhance environmental instruction.
- Conduct a national satellite teleconference for high schools and colleges on environmental technology careers.
- Identify successful business/industry and education partnerships as potential sites for two-year college faculty internships.

ATEEC GOAL 3: Strengthen environmental technology education by providing support services for program improvement

Objectives:

- Continue publishing ATEEC News and maintaining the ATEEC Website.
- Develop an environmental careers chart for high school students and counselors. The chart will be based on the Defining Environmental Technology report
- Develop a Website database of environmental jobs to assist students, graduates, and employers.
- Develop an environmental technology careers video for high school students. The video will emphasize the need for science and math skills.
- Develop a marketing plan for ATEEC's products (e.g., career video, "How to" manual).
- Inform under-represented populations and two-year college environmental technology instructors in select areas (i.e., Brownfields) about ATEEC support services.

For futher information, please contact the authors or:

Diane Gere or Cynthia Lake
ATEEC
500 Belmont Road
Bettendorf, IA 52722
(319) 359-7531, ext. 292

ENDNOTES

[1] ATEEC homepage: *www.ateec.org*

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BUILDING AND SUSTAINING A COMMITMENT TO IMPROVING LEARNING THROUGH STAFF DEVELOPMENT: THE MIAMI-DADE COMMUNITY COLLEGE JOURNEY

Miami, Florida

George H. Copa

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Miami-Dade Community College began its commitment to staff development in the early 1970's under Carol Zion, Director of the Office of Staff and Organizational Development. Zion later provided national leadership in staff development as a founder of the National Council for Staff, Program, and Organizational Development. This report will focus on the special attention given to staff development at Miami-Dade Community College beginning with the 1996 initiation of the Teaching/ Learning Project which has since won several awards and national recognition for excellence.[1] From the beginning the project's central commitment was to improve learning for all students. While the initial focus began with faculty, it soon expanded to include all staff. This case study describes the development and recent operation of the Miami-Dade Faculty, Staff, and Program Development initiative and future plans, including some bold new directions. The program's history and its new directions hold several lessons for designing and implementing teacher learning in the workplace and community.

INSTITUTIONAL BACKGROUND

Miami-Dade Community College (M-DCC) opened in September, 1960. It is a two-year, state-supported community college with six campuses and many outreach centers. M-DCC is nationally recognized as one of the largest and best community colleges in the United States. The college is governed by a seven-member District Board of Trustees and a college president. The president at this time is Eduardo J. Padron; the president during the initiation and building of the Teaching/Learning Project described in this study was Robert McCabe. During 1995-96, enrollment for credit students at M-DCC was 74,060 and for noncredit students was 50,569. M-DCC offers the Associate of Arts Degree, Associate of Science Degree, and Vocational Credit Certificates in Business, Technical, Allied Health, and Public Service occupational areas.

The average age of students is 26, and more than 67 percent of students attend on a part-time basis. In terms of ethnic mix, 17 percent of students during 1995-96 were non-Hispanic whites; 22 percent were non-Hispanic blacks; 59 percent were Hispanic, and 2 percent were other. Given this mix of students, M-DCC enrolls the highest number of Hispanic students and the second largest number of black students among all colleges or universities in the United States. M-DCC graduated 5,268 students in the academic year 1995-96 and has awarded a total of 154,523 degrees since it opened.

With this student base, M-DCC employed 2,292 part-time and 3,526 full-time people in 1995-96. The faculty is made up of 807 full-time and 1,305 part-time employees. In terms of education, 94 percent of the full-time faculty hold advanced degrees and 21 percent have earned doctorate degrees.[2]

This case study focuses on one of the M-DCC campuses, the Kendall Campus, located in the southern part of Dade County in a suburb of Miami. The Kendall Campus enrolled a total of 52,912 credit and noncredit students in 1995-96. During the faculty, staff and program development initiative reported in this study, the campus has made the most concerted effort at building and sustaining the initiative.

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PROCESS BACKGROUND

The faculty, staff and program development initiative described in this study began in June, 1986 when then-president, Robert McCabe delivered a concept paper entitled *Organizing M-DCC to Emphasize Faculty/Student Performance* to a group of 120 faculty and administrators. The paper provided an outline for a multi-year, institution-wide project with a rationale defined this way:

> *If we were to improve overall teaching and learning and encourage faculty to take a leadership role in the process, we would have to provide information and support, capture and share the expertise of excellent veteran faculty, raise the status of teaching as a profession, and reward the type of performance we say we value.*

By late Fall 1996, the Teaching/Learning Project had a project director and a 26-member steering committee. In January, 1987, four sub-committees had been put in place to focus on institutional values, the teaching/learning environment, faculty excellence, and new faculty. A total of 38 M-DCC personnel were directly involved in the project.

During 1987-88, the project focused on raising awareness, expanding involvement, and realizing initial outcomes. Information on the project was shared in several formats inside the college, among the community, and nationally. Two new steering committee sub-committees were formed with a focus on classroom feedback and learning to learn and faculty advancement, bringing nearly 60 college personnel directly into involvement with the project. External consultants helped with the work of the steering committee and sub-committees. The year's products included a statement of institutional teaching/learning values to be included in all college publications, a new orientation process for new faculty, availability of two new graduate courses on teaching and learning (effective teaching and learning, research in the classroom), two videotapes for faculty on exploring classroom feedback and cultural differences in learning styles, and securing funding for 24 endowed teaching chairs.

In its third year (1988-89), the project acted on its recommendations and sought further involvement of college personnel. Four new sub-committees were formed focusing on part-time faculty, administrators' roles, support for faculty, and non-classroom faculty. The project now directly involved just over 100 personnel. Major outcomes of the year were a Statement of Faculty Excellence and the Faculty Advancement Policy Guidelines.

The Statement of Faculty Excellence served to "provide a common understanding of what it means to perform in an excellent manner at Miami-Dade Community College."[3] The Statement would be used as a foundation to assess potential new faculty, for annual performance reviews of existing faculty, to guide portfolio development and review for faculty tenure and promotion decisions, and to help faculty to judge their own performance and make decisions about professional goals and development.

The Faculty Advancement Policy Guidelines put the standards and their use into operating policy. The faculty was extensively involved in putting the advancement policy guidelines together, and the guidelines were passed by faculty referendum in April, 1989. By June, 1989, 33 endowed chairs had been funded.

The fourth year of the project focused was on revising and fine-tuning the work of previous years, based on the experience of the first year of implementation. A College-wide Student Feedback Questionnaire was pilot-tested to collect information based on the Statement of Faculty Excellence. The fifth year of the project, 1990-91 brought 48 additional college personnel into the project by forming two new sub-committees of the steering committee with a focus on support staff involvement and administrator advancement. These major milestones brought representatives of all personnel categories directly into

the Teaching/Learning Project. Another milestone during this year was the faculty and college executive committee's passage of the Faculty Advancement Procedures. This action institutionalized the professional development program envisioned for the Teaching/Learning Project. Two other milestones of the year included appointing Teaching/Learning Center Project Directors at all campuses and much more extensive pilot testing of a Student Feedback Questionnaire. The charge to the Teaching and Learning Centers was as follows:

1. Develop a core program, consistent College-wide, designed to implement the outcomes of the Teaching/Learning Project,
2. continue to provide the traditional, campus-specified, staff and program development opportunities, and
3. offer support for instructional design, including classroom research and expanded application of technology.[4]

During the sixth year, 1991-92, the focus was on implementing and revising the faculty advancement policies and procedures. For the first time, college decisions on performance review and tenure and advancement were made on the bases of the new procedures. Twenty-five endowed chairs were awarded to faculty members who were deemed excellent performers by their peers. Miami-Dade Community College was the first community college in the nation to use the idea of endowed chairs to recognize faculty performance. Each chair represented a contribution of $45,000 from individuals, businesses, and civic groups and was matched by $30,000 from the State of Florida. Chaired faculty hold their positions for three years and get a $7,500 award annually. Also during 1991-92, the Statement of Administrator Excellence (parallel to that for faculty) was adopted by the M-DCC Board of Trustees.[5]

The seventh and eighth years of the Teaching/Learning Project, 1992-94, continued to focus on assessing the implementation of staffing and staff development policies and procedures, and moving closer to full institutionalization. Several of the Project's subcommittees stayed in place, playing a significant role in the troubleshooting, assessment, and revision process. Milestones during this year included:

- approving the Statement of Support Staff Excellence (making a full set for all categories of college personnel)
- testing an Administrator Feedback Questionnaire, similar in purpose to the student feedback questionnaire for faculty
- soliciting comments for improvement of the new faculty advancement procedures.

By the end of the year, accomplishments also included the first doctoral degree awards for the joint University of Miami-Miami-Dade Community Colleges doctoral program, voluntary participation of 78 percent of full-time faculty and 59% of part-time faculty in the College-wide student feedback program, and award of the seventy-fourth endowed chair. In addition, a national panel of higher education practitioners awarded the college the first Theodore M. Hesburgh Award for faculty development to enhance undergraduate teaching. With many of its products a part of the M-DCC culture, plans were being made to phase out the Teaching/Learning Project and continue institutionalization of its purposes and activities in other ways.[6]

The objectives of the faculty, staff, and program development initiative began as the Teaching/Learning Project were made very clear from the beginning. The three objectives were as follows:

1. To improve teaching and learning with a focus on the increasing numbers and needs of nontraditional students to provide them with a high quality education.

2. To make teaching at the College a professionally rewarding career by establishing high performance standards to challenge faculty and to enable them to take pride in their accomplishments.

3. To make teaching and learning the focal point of Miami-Dade's activities and decision-making processes.

The key features of the initial phase of the M-DCC faculty, staff and program development initiative were:

- declaring institutional values
- focusing on faculty excellence
- creating a supportive teaching/learning environment
- nurturing new faculty.

While several of the policies and procedures resulting from the Teaching and Learning Project became College-wide operations, a new organizational entity called the Teaching and Learning Center was put in place on four of the campuses, reflecting the high priority and paying special attention to faculty and staff development. The Center with the most intensive program emerged on the Kendall Campus, the focus of this case study.

TEACHING/LEARNING PROJECT

The major features of the Teaching/Learning project at the Kendall Campus are described below.

Declaring Institutional Values

Early on, a decision was made to ground the Teaching/Learning Project in a set of institutional values focused on the importance of teaching and learning to the college's success. An emphasis on valuing individuals and learning led to a focus on changing to meet educational needs and improve learning. While these changes were being made, the college also focused on maintaining quality while assuring access for all individuals. Diversity and community partnerships are valued as ways to broaden understanding and learning.

Focusing on Faculty Excellence

The Statement on Faculty Excellence serves as a base for the features of the faculty, staff, and program development initiative at M-DCC. The Statement (1990) defines the qualities and characteristics of excellent faculty in four categories:

1. Their own motivation and their ability to motivate others. Excellent faculty are dedicated and committed to education as a profession and the college's philosophy, are enthusiastic and project a positive attitude about students' ability to learn, and set challenging individual and collective performance goals for themselves and their students;

2. Their interpersonal skills. Excellent faculty respect others and their diverse talents; are responsive, available, and fair to students; collaborate with colleagues; and create a climate conducive to learning;

3. Their knowledge base. Excellent faculty are knowledgeable about their work areas, disciplines, and how students learn; integrate current subject matter and diverse perspectives into their work; and are well-prepared and well-organized; and

4. Their teaching skills. Excellent faculty apply principles of learning to the teaching and learning process; provide students with alternative ways of learning including cooperative learning opportunities; encourage independent thinking, intellectual curiosity, and analytical skills in students; give and accept constructive feedback; and provide clear and substantial evidence that students have learned.

Two of the statements clarify the definition of faculty excellence that applies to all M-DCC faculty, whether assigned primarily to classroom-based activities or non-classroom areas. All faculty are involved in teaching/learning and student success.

As noted above, the Statement of Faculty Excellence was approved by faculty and administration of the Faculty Advancement Policies and Procedures. The most recent edition of these Policies and Procedures states that they are "designed to encourage and support the professional development of faculty members, to align the College's reward system with professional performance as defined by the College's Statement of Faculty Excellence, and to ensure consistency and equity in the application of the policies and procedures." [7] The policies and procedures address performance reviews, the performance portfolio, continuing contracts, promotion, endowed chairs, and a process to monitor and review the polices and procedures. A set of philosophical concepts provide direction for developing policies and procedures relating to faculty advancement.[8]

Creating a Supportive Teaching/Learning Environment

Two of the major products of the Teaching/Learning Project make major contributions to a more supportive teaching and learning environment at M-DCC. These are the approved statements of excellence for support and administrative staff.

Statement of Support Staff Excellence

The introduction to the Statement of Support Staff Excellence notes,

> *No educational institution can hope to succeed in its mission to provide high-quality learning opportunities for its students without the total commitment of all its personnel....The critical role of faculty in the teaching/learning relationship is obvious. Not nearly as obvious, perhaps, but just as critical is the role played by support staff in the advancement of student learning.*[9]

The qualities and characteristics of excellent support staff are described in five categories: Motivation, Professional Performance, Interpersonal Skills, Knowledge Base, and Leadership/Supervision.[10]

Statement of Administrator and Professional Staff Excellence

The M-DCC Statement of Administrator and Professional Staff Excellence[11] has a similar introduction and format to the statements for support staff. The qualities and characteristics of excellent administrators and professional staff are described in five categories: Leadership/Supervision Skills, Professional Performance, Interpersonal Skills, Motivation, and Knowledge Base.[12] M-DCC is currently working on the feedback system for staff in supervisory roles that will assist in improving the performance review process, assuring that the statement of administrator and professional staff excellence is enacted consistently and effectively.

Nurturing New Faculty

Staff development for new faculty and staff takes the form of orientation sessions and a mentoring program. Both full and part-time faculty are included in the program.

Teaching and Learning Centers

As a result of the Teaching/Learning Project, at one time each campus of M-DCC had an operating Teaching and Learning Center with a full-time director and identifiable staff and budget. However, of the original five, only two of the campuses now have Teaching and Learning Centers in place—Kendall and North. While numerous factors account for the elimination of the centers on the other campuses, the primary cause was a cutback in fiscal resources. Campus administrators had to make difficult decisions about which programs and staff to cut on every campus. As will be apparent in the following section on Future Directions, M-DCC is now moving to a College-wide staff development strategy, ensuring more consistent service on each campus. In 1996-97, the Teaching and Learning Center for the Kendall Campus (known as the Center for Faculty, Staff, and Program Development) defined its mission as follows:

A comprehensive resource for professional development and performance excellence. The Center is a place where any employee with an idea can receive support, guidance and access to a network of internal consultants who can help the employee achieve campus goals and meet student needs.[13]

The goals of the Center for Faculty, Staff, and Program Development on the Kendall Campus for 1996-97 focused on enhancing the effectiveness of faculty, staff, and administrators by providing leadership, consultation, and support for new initiatives for program development; curriculum and instructional development projects; integration of technology into the curriculum; and the use of new delivery systems for instruction and information.[14]

To guide the goals' planning and implementation, the Kendall Campus Center put in place a Center Advisory Committee with sub-committees in Academic Affairs, Administrative Training, and Support Staff Training. The Center employed a staff of about fifteen professional and support staff. Five staff members, including the director, are full-time. Some of the staffing consisted of faculty on temporary or part-time leave from teaching positions to work on projects in the Center. The Center had a budget of about $450,000 from regular M-DCC funds and engaged in a wide variety of externally-funded training and development projects to enhance its size and funding.

The Kendall Campus Center described its services and resources as workshops/seminars, resource information, travel, instructional design and development, University of Miami and Florida International Courses/Programs, consultation, and instructional technology. Each category of services and resources included a wide variety of activities.[15]

The staff development program's impact can be seen in the 1996 Annual Report for the Center for Faculty, Staff and Program Development on the Kendall Campus of M-DCC. The report is organized by the major "development goals" for 1996-97 summarized in the previous section. Illustrative accomplishments of the Center for Faculty, Staff and Program Development include: conducting 211 workshops on topics ranging from orientation for adjunct faculty, to team building, to teaching and learning on-line, to basic first aid for security officers; providing support for 16 curriculum and instructional development projects; instituting new programs that promote distance learning; promoting the expansion of departmental and faculty web pages; sponsoring 10 technology practicums for a wide range of departments; and scheduling a total of 614 events involving 13,344 people.[16]

Major new directions have been set forth for the M-DCC faculty, staff and program development for implementation during 1997-98. The new directions were developed by a Human Resource Development Reengineering Team in light of the profound impact of dwindling resources, a changing work environment, rapidly evolving technology, demands of external stakeholders, and changing workforce needs. The work of the Reengineering Team focusing on the human resources of the college (and described in a report entitled *Recommendations for Training and Performance Management*) included assessing current practices relating to training, supervisory training, and performance appraisal of professional and staff personnel; reviewing public and private sector programs; Internet searches; and obtaining feedback from one-to-one interview, town hall meetings, and focus groups of faculty, staff, and administrators.[17]

IMPLICATIONS

Some important implications can be gleaned from the MDCC staff development program journey for designing and implementing teacher learning in the workplace and community. An important implication is the crucial importance of top administration's support for staff development initiatives. Administrators play a key role in securing adequate resources and encouraging participation. In addition,

the staff development initiative must spring from and remain accountable to its effects on learning and must include attention to all of the staff involved in particular topical areas related to student learning. The staff development effort must also have adequate resources to deliver what is planned and promised. As with student learning, staff development necessitates resources on a regular and dependable budgeting cycle. Another important implication is that in order for staff development to have the desired effects, the participants must be supportive. This support comes in part with participation in deciding what and how staff development will occur. The staff development effort must develop a reputation for quality through careful planning, by continuously monitoring impact, and by making necessary changes quickly. Improving an institution through staff development does not occur quickly. Rather, it requires a commitment of many years to put effective systems into place, remove disincentives, reach a critical mass of staff, and support programmatic change.[18]

For additional information, please contact the author or:

Marie Nock
Miami-Dade Community College
111011 S.W. 104th Street
Miami, FL 33176
(305) 237-2366

REFERENCES

Marty Jenrette, District Director of College Training and Development and Project Implementation, Miami-Dade Community College, (305) 237-3775.

Marie Nock, Director of College Training and Development, Miami-Dade Community College, (305) 237-2258.

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[8] For further detailed information on the qualities and characteristics of excellent faculty developed as part of the faculty, staff, and program development initiative at M-DCC, see Miami-Dade Community College. (1990, April). *Statement of faculty excellence*. Miami, FL: Author.

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[11] Miami-Dade Community College. (1992, May). *Statement of administrator and professional staff excellence*. Miami, FL: Author.

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For further information on
The Teacher Learning in the Workplace project, please contact

CENTER ON EDUCATION AND WORK
964 Educational Sciences Building
1025 W. Johnson Street
Madison, WI 53706-1796
Phone: (800) 446-0399 or (608) 263-5936
Fax: (608) 262-3063
Web Site: www.cew.wisc.edu
E-Mail: cewmail@cew.soemadison.wisc.edu

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